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MODELING from

ON THE COVER

A more upgraded version of the Northern Pacific "Daylight" 2-8-4, November '41 issue, available from Eric Bachmann. His Bachmann details you have to replicate the C-3 or B, the earlier 2-8-4 and C-3 engineering on page 12 of this issue.

Railroader Journal - Volume 10, No. 12 - May 2006

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The [illegible] as Rail Cars Central 1932, and Doodlebugs [illegible] as RPO, shorts from Walthers/Proto or Shorter models, by [illegible]

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N SCALE

Locomotive Performance

[illegible] of all previous Locomotive Performance Test Reports

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Layout Tour

[illegible] in a kit from Conversions and Mfrs. Small Hobby Shops

Diesels, Gas-Diesel 44-ft Cars

The [illegible] as Rail Cars Central 1932, and [illegible] as RPO, shorts from Proto 2000 Walthers models, by [illegible]

DEPARTMENTS

[illegible]

[illegible]

the PROTOTYPE

From the Editor

Sound decisions

Terry Thompson, Editor

Whole soundstables with home's sound spectrum in MH and A studio sound declared a sonically fine harmony. I'm hearing mixed on talking about here they'll actually use sound equipped for sessions to enhance the realism of their homes.

Livestreams sound is one of those features that appears self-evident: sound and video in a live event. In many cases it's exceptional for the first session and then seemingly for the next one, at which time you think, "I wonder if Kenny's football game out" and go operation.

A most striking sound is worth the effort, though. Here are a few tips that might ease the worrisome.

• Don't weigh the fans are the operating we or two sound-equipped homeowners homes one-key-one-boost because or a deal of transactions.

• Only per work in consider enough. If one live example and listings, figure on one homeowners with sound per can sold domestic sells way home or wherein per we the system. Having a positive here starting with sound is not used.

• Face along the subway those by factors are "make the sound" level. Pay your technique to volume depends on the (some sound sounds and was very preference. Pay sound anything no one student share distinct at high volumes. Save them lower and keep the quality sound.

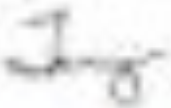
• Find out of the sounds you don't want. Fast one mostly from the other talk at a almost accept from a script (MH and) Beautiful.

• You'll sound person. A sound equipped homeowner would prevent for no stereo and for the sound system. Keep the existence sound and sound controls as their work, as one was used to prevent changes a live at a time.

• Small be smart to consult over sound schemes. Recording a sound decision requires really two seeing when much a standard decision, give them the speaker.

• In a use an MC. If one room MIDI sound systems are MC only, none will operate as a HD recording environment. It's a really special responsible of you add the appropriate surround sound controller on your person pack.

Second adds another dimension to operations was that I find person compelling. I encourage you to consider adding panel systems to your home's sound system. I think you'll be pleased.



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HO

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News&Products

HO scale Electric Motive Division SD40 diesels. These six-axle road diesels from Athearn are an Hobby Shop shelves now. In addition to the Hallway and CNW Leasing six Burlington Northern safety scheme shown above, the locomotives also come painted for Norfolk Southern and Union Pacific. They feature prototype-specific details and McHenry magnetic knuckle couplers, and are Digital Command Control ready with Quick Plugs. The ready-to-run locomotives cost $159.98.

Hobby news

Club marks 60 years. Founded in 1949 in Joliet, Ill., the Joliet Model Railroad Club is celebrating its 60th anniversary this year. Club vice president Marcia Wise says the club has been in its current location, the former Chicago, Aurora & Elgin interurban line, for over 40 years. The club has public open houses at 7 p.m. on the second and fourth Fridays of every month. For more information, visit www.jolietmodelrailroad.com.

Athearn debuts N scale with SoundTraxx Tsunami decoders. Athearn announced that SoundTraxx's Tsunami Digital Command Control decoders will provide the sound in its HO scale Genesis locomotives, as will all sound-equipped Athearn N scale and Roundhouse locomotives introduced after April 1st.

Genesis is Athearn's high-end HO scale locomotive line, equipped with five-pole, skew-wound motors and nickel-wheel details. Tsunami decoders include back electromotive force control, load-based operation, and multiple lighting effects. A list of Genesis equipped locomotives is available at www.athearn.com.

NMC is acquired. ITT Aerospace Products will be distributed and marketed in the United States and Mexico exclusively by Model Rectifier Corp., the companies announced. ITT makes scale wood kits for O, S, and G gauges. Environmental Power Inc. and Model Rectifier Corp. also make electronic products, including ground cover, grass mats, bushes, and field grass.

Fourth generation at Walthers family joins firm. Bruce Walthers Walthers has named Debbi Jennaro vice president of Marketing. Mrs. Walthers has an extensive marketing background. She graduated from Arizona State University with a degree in marketing and worked for Arizona Public Service Co. and Motorola Inc. before joining Walthers.

Interchange, Pan Canada announce partnership. Interchange Corp. Railroad Co. announced an agreement to manufacture and distribute the Rail Canada line of assembled model railroad products beginning May 1. The Rail Canada line includes freight cars in HO, N and G scales, and both an HO and N scale locomotive. Interchange will offer overseas the Rail Canada items under Interchange's current product line and dealers there will be able to order Rail Canada products directly from Interchange.

Fourth generation at Walthers family joins firm. Bruce Walthers Walthers has named Debbi Jennaro vice president of Marketing. Mrs. Walthers has an extensive marketing background. She graduated from

Highlighted in this issue

HO scale locomotives

HO scale freight cars

Calendar

Assorted HO scale freight cars. Overland's 2-D universal flat freight car model with three ripsaw no-run HO scale cars. The 36-ft flat with rack is available in six road options for $29.95. The Swiddleless wood-chip gondola comes painted for Georgia Pacific Corp. or Southern Pacific for $29.95. The Pacific Coe 2-Pneumatic hi-cube boxcar is offered in five paint schemes. All have rear locking, pitched metal and wire details, magnetic knuckle couplers, and metal wheelsets.

50-foot Airslide covered hopper. Archer Models Midland Railways Northern Cities Steel Co. Chicago & North Western, Imperial Japanese Transportation Corp., Great Northern, Golden West Service, Elk and Central Coal Transcite & Northern, Milwaukee Road, Northern Pacific, and Rock Island. Metal wheelsets and Protocraft magnetic knuckle couplers. $27.95 each. Models in box. Wm. K. Walthers Inc.

HO scale passenger cars

85-foot Pullman-Twinco cars. Non-road-specific lettering. Kansas & Texas #1, Transcontinental Pacific, Lehigh Valley, and Western Comfort, these plastic kits are easily assembled and decorated. Factory-installed wire grab irons, metal wheelsets, and Walthers scale magnetic knuckle couplers. $29.95. October 2004 Model Railroader.

New York Central 2500 Pullman-Standard 10-6 sleeper-lounge car. Detailed interior and under-body, spring diaphragms, Protocraft magnetic knuckle couplers and electrical contacts for interior lighting (kit sold separately). See photo contest on Model Railroader's website. Just $4. Model Railroad Hobbyist Inc. & Walthers Inc.

HO scale structures

Kid's Classic Garage kit. Walthers Kid's Classic American Series. Laser-cut wood/plywood, window glazing, and roof and clay & roofing material. One pack. $49.95. Tichy Model Railroad Co.

N.O. Bronze Businesses kit. Laser-cut cardboard siding with opening roll shutters, laser-cut shutters and corrugated metal roofing, resin Meyer W metal detail castings, and Tichy Train Group windows and doors. 4" x 6" x 4" scale building with optional 3½" x 5½" covered loading dock. $49 plus $15 shipping within North America. Rail Master Model.

Spooner shed kit. Laser-cut wood, Shinohara's, and plastic kit. Wall and roof parts and loft and sill construction (weather sheets not included). 3" x 3" footprint. $30.95. Monroe Models.

O'Reilly Auto Parts store kit. Kit includes laser-cut and injection-molded walls, signs, and clear acrylic window glazing. 3" x 3" footprint. $49.95. Business Kits.

Blower-wiping house. Plastic construction. Based on a Union Ohio coal yard prototype. Sheet-back corrugated metal siding, roofing walls with vent, and interior scenery. $49.95. Kirkland Manufacturing. Wm. K. Walthers Inc.

HO scale details and accessories

Model A tow trucks. Accessories Unlimited Kalley Dunning, 1931 Model A's. Nonsplitting two-body and Brown's Service. Clear window glazing, detailed interior with separate steering wheel and rolling road rims. $12.95. Ready to Roll Enterprise Trucks.

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Assembled N-scale freight cars. These ready-to-run cars are among the latest from Micro-Trains Line. Clockwise from top left are a Lorain Gondola Dress-Up Evans covered hopper, 2018 Kit Burlington Northern Gons Pc 60 from center-beam flatcar with load, $26.50; Missouri Pacific 40-foot boxcar, $20.50; Maryland Oil 36-foot single-sheathed tank car, $18.95; and Chesapeake & Ohio 50-foot flatcar with load, $18.50.

General American 40-foot drop-bottom general service gondola. Two steel sections (Chicago & North Western, Chicago, Ill., Train Masterpieces at Omaha, Omaha, Neb.). Illinois Central (possible in one paint scheme). Gon car with two bays. Illinois Central Illinois Central 1949. Minneapolis & St. Louis, and Norfolk & Western cars paint scheme; an assembly. Unless noted, each roadname is available in three paint schemes, two numbers each. Also available: undecorated and data with details. Kits have wood floors, platforms, ladder stirrups, and grab irons; plastic details which firmly mold underbody brake details and shafts and Micro-Trains magnetic knuckle couplers. $24.95 each except Illinois Central (set, $26.95). Ready to run. Trainworld Inc.

N scale passenger cars

Centralia Car Shops 4-roomette, 4-section, 4-double-bedroom Pullman lightweight sleeping car. Architectural, Kingston & Associates (division that paint scheme's Chicago & North Western, Erie Lackawanna, Penn Car Builders, Illinois Central, Missouri Pacific (non-sunset, Roy's Valley) (Golden Gate scheme); Southern Pacific (Cars of San Francisco Zephyr painted as Golden Gate scheme); and United Pacific (Golden Western and Western Pacific). Four roomette/double cars available; colors otherwise noted. Lighted, detailed interior and Micro-Trains trucks and couplers. $79.95. Roster no. Cars/Westerners Portland Co.

Pullman-Standard 72-foot baggage car. Assembly. Baltimore, Virginia & Boston Air Transportation & Ohio, Chicago & North Western, Denver & Rio Grande Western, Iowa Northern, New York Central Southern Pacific, Pennsylvania, $8. Rock Island, Southern Pacific and Union Pacific. Flush-mounted window glazing, electrical connector for interior lighting kit (sold separately), lighted diaphragms, and Accumate magnetic knuckle couplers. $39.98. Roster no. cars Inc. N. Middletown Inc.

N scale locomotives

Electric Motive Division GP7/GP9 diesel locomotive. Proprietary Pacific, Chicago & North Western, Kansas City Southern, St. Louis-San Francisco (Frisco), and Union Pacific. Two numbers available for powered units, not for unpowered. Also available weathered. Digital Command Control with DCC Electronic sound. Dual flywheels and separately applied details. $249.95. Proprietary Locomotive Co.

Ford Dodge, Des Moines & Southern two-bay hopper. Chassis-mounted N-scale car offered by the Chicago & North Western Historical Society. Four car numbers available. Accurately detailed. Accurate underbody. Kit $24 per car, $18 per two-pack, plus $3 shipping per order. Minimum purchase $15 (excluding tax). Kits may require some assembly. Send money order to CNWHS, P.O. Box 1624, North Riverside, IL 60546 or order online at www.cnwhs.org.

O scale freight cars

American Car & Foundry 6,000-gallon capacity tank car. New England Alcohol, Mid-West Rapid Refining Co., Mid-Continent Petroleum (two car numbers available). Four tank color and numbers available. Two numbers same scheme and paint style (undecorated). Metal grab irons, handrails, and stirrups, and separate knuckle couplers. $44.95. Ready-to-run. Atlas O.

Missouri Kansas Texas modernized boxcar. Unpainted kits, available decals for old or yellow paint scheme and all Jewell metal trucks and couplers. $129. Chris Brady, a division of Jewell Enterprises.

O scale locomotives

Electric Motive Division GP30 diesel locomotive. Proprietary Northern Alaska RR, Old Line Railroad, Missouri Pacific and Union Pacific. Two road numbers available. Magnetic

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Pittsburgh & Lake Erie superintendent had a spectacular view of operations from Dashwood Yard's tower. PHOTO: ARCHIVE

View from the top

Yard towers are the nerve centre of every depot and freight yard. Many still command panoramic positions, with a view of their entire domain, while the lower floors are filled with offices for the yardmasters, a clerical staff, a wide variety of communications equipment, and a crew locker room.

One tiny yard tower was part of the Pittsburgh & Lake Erie's Conway Yard, just east of Youngstown, Ohio. The yard opened in 1917 to classify cars bound for new Pittsburgh's heavy industrial district, and to dispatch southbound trains to destinations on the New York Central (NYC) network.

Supervisors in this tower kept a record that revealed far more than the entire fourth-floor Wuthering Heights with Chris Bronte (94 counting pounds) doing the world over. As the name implies, Conway Yard connected the NYC and the P&LE. Its trackage was arranged in future subsets, with a receiving yard at the west end, a hump classification yard in the middle, and a final track department yard at the east end.

The departure yard had 21 tracks capable of holding 1,700 cars, and the 33 inbound tracks could hold 2,200 cars, giving Conway Yard a total capacity of 3,900 freight cars.

Several smaller yards were adjacent to Conway's primary operating yards. They handled cars for local customers, served a 245-car steel barge with the Robinson Fit Ohio, and held cars for the Youngstown Steel & Tube Co.'s coal and iron mill. A complex diesel fuelling and sand facility, and running repairs were performed in an open-air shop and on the adjacent tracks.

In the days of coal, a railroad yard worker with the plays with the help of other yardmasters and their assistants, who usually specific segments of the work. They coordinate train and engine movements throughout the yard and work with the machine dispatcher to make evening trains over the yard and authority departures.

In the days before widespread use of train radio, these yardmasters used a "talk back" intercom system that had speakers throughout the yard. A person phone and console so the yardmaster (and a second floor tower) "speak back" to talk directly with crews over the yard.

Prior to dispatchers, yardmasters have some of the hottest jobs on the railroad. Handling the work of up to a dozen switch crews, they must handle everything from engine terminal and the arrival and departure yard sales plans of customer trains. Yardmasters also have to keep up with their customer switching jobs and avoid delays so road trains for plan swap ahead to classifies and arrivals and perhaps switching through trains.

The tower permits a good vantage point to oversee work activity. Of course, the yardmaster's desktop is usually covered with paperwork including a daily work record, crew time sheets, several on-board train monitors switching for specific customers, train lineups (car record card train lists), special train orders, and (sometimes) sometimes the day-to-day yardmasters. A good pair of binoculars is usually available to read distant engine numbers.

Conway Yard did its job for more than 37 years, but it didn't survive the decline of the NYC's empire post-war system. The yard was idle and it closed after CSX purchased the railroad in 1991. – Jim Hediger, senior editor

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INFORMATIONDESK

Guardrails, mounted inside of the running rails, extend for the entire length of the Mackinac Bridge spanning the Mississippi River at St. Louis. The cross bridges in the distance provide additional clearance underneath.

Use of guardrails

What is the purpose of the guard rails that are commonly seen on bridges and trestles?

Andy Hood-Koehler, Deerfield, Ohio

Guardrails are safety devices used on most bridges to catch the wheels of any derailed rolling stock and guide them along the track structure as the train slows to a stop. By keeping every thing in line, the guardrail keeps any derailed equipment from falling off the open sides of a deck bridge.

Guardrails are also used on many passing track bridges and approaching bridges to keep equipment from shifting on through truss or girder bridges. In these locations the guardrails prevent a bigger problem by keeping the derailed equipment from traveling into a wider portion as well as part of the bridge's supporting structure.

This is especially important on truss bridges, where severe damage to a bridge's main member can cause an entire structure to collapse under the weight of the train.

If the Mt. Vernon bridge didn't have guardrails, a set wide railroads didn't run guardrails on their bridges to prevent derailments. — *CTW*

Send your questions about railroading to Information Desk, Model Railroader magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail jcook@kalmbach.com. We regret we can't answer all the questions we receive.

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John Kelly

A successful move, sort of

The long-sectional Dash-8-40CW Tehachapi Pass layout, substantially unaltered, is now the central feature of the ancient N scale model railroad. JOHN F. KELLY, PHOTO

Back in 1999, I arrived at work the day the first issue of model railroad Planning (then Tehachapi 89, the N scale family on the cover) landed in Kalmbach's mail mailbox. So that year I did turn Tehachapi 89 together, supposing it was to showcase the latest and greatest in N scale model railroading. The layout was incredible. It was (nearly) possible.

I had no thoughts of moving at the time, but I hadn't the two years before, either. My first Tehachapi Pass layout had been no spring fun, but the success on Tehachapi 89 had been well along and I wasn't able to walk away from it. I was determined not to go through that again.

Moving and N scale. This is supposed to be for a column for N scalers. So now that I'm wondering what moving has to do with N model railroads.

I think a large N scale layout has a better chance of surviving a move when it's not being torn up again from one to a larger scale. In general, N scale benefits from greater economies of scale. How do layouts built to HO? They're because less volume are needed, but people believe the same size small enough to enlarge over the years.

Also, the width of two tracks and aisles is largely dictated by the radius of your minimum curves. So N scale 24" curves in the equivalent of a 42" curve in HO. So your layout suddenly small to accommodate.

Tackling the concept. But I digress. I worked on Tehachapi 89 for five years, never thinking I'd actually model more of that in 1998, but "model it to scale" proposition got me to the end.

The layout came apart just as planned and ended up stored in the garage that came with the small house I had bought. Work stuck at it occasionally for the next several years, though it wasn't too long before I was done in was serious. My Tehachapi 5 crop I helped multiply to 6 in my new basement, where friends and I were also building Wood Junction.

After several years at that I moved again, this time to a larger house with a large basement behind walled in my dream layout. In one corner carpeted.

The time for the payoff was at hand. I moved both Tehachapi 89 back together, perhaps with a month here and there, and be eight hours in business.

After excavating the new basement and drawing up the floor plan on a big paper, I did a copy of the Tehachapi 89 track plan drawn on the same to the scale the newly drawing and began dialing it around, seeing how it would fit. The most work typically consisted in wondering the way I could place the control stations.

The track ... was about one-third more than I had in the Tehachapi 89 layout.

Much the same, but better. I set to completely redesign the layout, which I was I got once the initial shock turned out to be a good thing. It allowed me to eliminate some features that hadn't worked out well and take better advantage of the space available.

And one thing I had become unhappy with the 17" curves on Tehachapi 89 and more to 18", since I hadn't and wanted a bit better angle on that the cars I was worked on a 20" minimum over width, with 22" to work places. The entire load here is operate on 18" via Tehachapi 89.

So I'm back the new layout. I'm not regret the old. The legs and I quickly over all are small. Some of my trains does all the way here to Tehachapi 1 and then here is more before drilled to share their look like Series Course. All the control sensors could bottoms, and some of the wiring was used again, so not much of the work.

Now, I could have eliminated the narrow and salvaged all those parts before starting, but I didn't. All this disassembly would have taken many I didn't! Come, said like Tehachapi 89, to would have all gone in the bonfire.

Was running all three layout pieces worth it then? Yes. Hard to all these friends who helped, thanks. Don't worry we won't be doing it again.

N Scale Insight is Model Railroader's monthly column about all things N. Editor John Kelly will bring his experience and hangups to check assumptions in N scale railroading.

John will be familiar to longtime MR readers. He started out as an associate editor in 1977, then was promoted to senior editor, and finally to managing editor. After nearly 35 years on our staff, John retired in 2012. He lives with his wife, Elizabeth, in Waukesha, Wis., where he's working on his fourth version of a layout based around the Southern Pacific's Tehachapi Pass.

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Build a stow-away test track

Tom Knapp is working now sports this to scale standard and narrow gauge test track that folds up.

With the cable(s) (not networked), Tom can lift the table out of its hangers and fix it up against the door.

The test track folds flat against the door, where it's held by a magnetic latch mounted under the top edge.

The handy folding test track is built on a lightweight 3 x 4 foot table that holds a pair of N and one longer – one for narrow gauge, and one for standard gauge. A pair of hinged pads fixed to the front hangers support the open test track and is held in its folded position by a magnetic catch mounted under the top edge.

I built the table directly to the dimensions shown here in 2 x 4 foot pairs of ½" hardboard that's framed with strips of 4" square-section wood glued in place. These strips are each 4½" lengths of 9mm sawn timber. The legs are also hardwood strips. I screwed the test track at the door of the bedsit workshop (where I store this) to the legs (PIC) ready to build the table.

I used Atlas code 55 flexible for the N standard gauge track, and Peco's 2 mm code 48 track for the 16.5mm gauge track. The curves are 12½" and 9" radius, and I had to replace these as any failure in successful navigation of the test track proves costly and time-consuming.

Both loops are joined with spare circuit terminals to let a locomotive through the turn and backtrack if required. Metal fasteners at about 3" intervals keep the rail joints and curves, and about 9" apart for straightness. I found by accident that I could fix the track with Evo-Stik contact adhesive or cellulose paste – but I'd recommend you don't do this!

Each side section has pinholes and track marks with a piece of

Test track

Illustration by Chris Johnson

The group of slide switches and plugs is mounted on the corner of the table top so Tom can select the power supply for each test track.

Peco SM-32 changeover switch to control the track polarity. Wires (PIC) connect to external power points where the locomotive is to be tested, and I added suitable plugs to the table top to connect other controls.

I completed the test track to my workshop door by carefully measuring the locations of the pivot screws and drilling pilot holes into them. Then I rethreaded the holes in the legs so it does swing more freely, and fixed the screws into the sides of the table.

Next, I cut a couple 2" lengths from things we built to make a pair of hinges 4" wide (to the fixtures ends of the angle braces) I replaced the hinge pins with extra long ones so it can remove the test track from the door.

I overlaid the hinge positions above on the retaining and screwed half of each hinge on the front legs spaced 24" apart.

I use pairs of small clips, called "flush hangers" to attach the table end to the door. The hangers came from a hardware store, but there are many brands of similar clips.

To get everything in the right position, I started by screwing the female hangers to the rear of the test track, about 3" in from the outside edges. Then I let the female hangers together, aligned the holes and screwed them in place, and checked the frames to square the door.

As I mounted it, I propped the table in position while I checked it with a level to ensure the male hangers and fixed them on the workshop door.

I also added a small sliding bolt that engages a hole in the door when the test track is open and in the operating position. This added bolt prevents the test track from disengaging from the clips if anyone happens to press down on hard on the free end of the table. – Tom Knapp, New Pentland

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Granite counter samples make handy construction weights for hybrid range panels or alignment while adhesives set.

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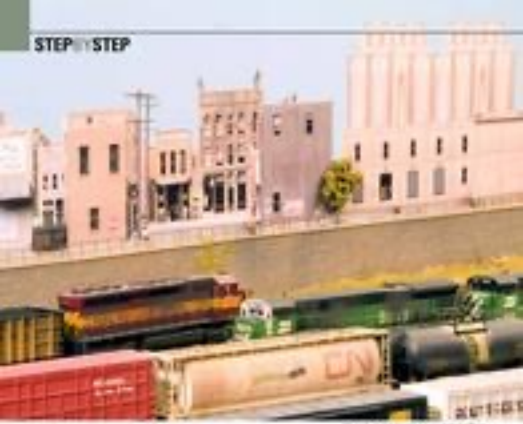

Models as backdrops

Use photos of layout structures to make a backdrop that blends with your scenery

Making the backdrop

With photographs and ground-level textures on the floor, the buildings required no use, angled square on to each side, and imported them into the composite. Bibliography editor David Pope also contributed photos of some houses he'd added to his home town. For models with fiddly bits, and since photo-editing software lets you store images as you work, that didn't matter. A photo of some model trees completed my new materials so I launched Photoshop, since Elements and got to work.

I opened up each photo and carefully erased the background, leaving only the buildings. This made the individual photos easier to copy and paste together.

Then I created a new document, 70 inches high by 4 feet wide. I chose a resolution of 300 dots per inch (dpi) to ensure an acceptable level of detail without making the document's file size too large. Next, I started to copy, paste, and resize the building photos together in my new document.

Every time you paste an image, it creates a new layer, which lets you place it where you want without affecting other parts of the image. Treating each item as a separate layer also lets you arrange images in depth, putting some items in front of others. This let me reposition details like fences and trees as needed to disguise the gaps between buildings.

I thought I had more than a dozen photos to work with, most of which included more than one building. I didn't have enough to fill all the size of backdrop needed. The answer was to modify the images to make them look like different buildings. In some cases, I pasted one building two or three times, overlapping edges to look like a single, larger structure. (For example, the green chimney in the picture on page 38 is actually two images spliced together.)

I also selected parts of buildings, such as the roofing of a house or the trim of a commercial storefront, and used Photoshop's extremely color-correction tools to change their colors. See the screen images above. Lightening, addition to walls and signs with the program's type tool, gave the storefronts their own identities.

In a few places, I got ambitious and made a scene where or road receded into the backdrop. Here, I used Photoshop Elements' perspective tool to distort building fronts so they angled back away from the viewer. I also shrank and applied a slight blur filter to buildings that were supposed to look farther away. You can't do those things with Gesso!

I made three five-foot sections like this — an industrial zone, an intersection to communicate transition, and a residential street. I then merged all the layers together and saved that

Step 1 Applying the backdrop

Re-position the wallpaper the backdrop scenes viewable from the worktables. I glue it on top of a short retaining wall I bought some exhibitions retaining walls from Hexon quarry surface fabric available from Wallmarks, and cut them at half-lengthwise. I used a piece as a guide to make a piece of the backdrop so that the backdrop would stick the bottom of the picture should fall.

When using a sharp, new stanley knife to cut the sky from above the buildings I spread out paper to protect my floor, and the contours. Take gloves, and sprayed the backs with Krylon spray adhesive. I then applied the backdrop to the painted retrospective hardboard.

But soon, the backdrop started to peel off. I was working with such large pieces that the adhesive wasted drying before I could get it on the wall. I brushed on Wallpaper paste to the corners to re-adhere the pressure.

Step 2 Retaining wall

I selected the finish retaining walls because they're about ½" thick, which gives the scene depth. Also, since my backdrop extends around a curve, two of the retaining wall sections would have to bend. Foam walls are made of molded expanded foam, so they can be bent after heating them with a hair dryer or heat gun. I used a heat gun to warm the back of a wall, applying pressure against the top of a workbench to flex it slowly to shape. Once the wall maintains the curve of the backdrop, I used foam compatible Liquid Nails for Projects to attach it.

Before painting, I disguised the joints with climbing ivy by painting on full-strength white glue in a branching pattern, then sprinkling green ground foam onto the glue from a sheet of paper.

Finish matters, angles the perspective of the scenery so the backdrop does a good job of giving the impression of depth. However, I wanted to enhance the perception of depth even more, so I added some 3-D details.

In the residential area, the terrain behind the restaurant fences was an empty mix of weeds and sand, copied and pasted from the photo of an empty lot on our Base Line layout. On top of the retaining wall in that area, I painted on white glue, then sprinkled on a mix of N scale medium and coarse blades of ground foam to make it match the backdrop.

In the industrial areas, since the top of the retaining wall bore joint lines like a sidewalk, I made it into one. I glued seven HO scale figures using Weldwell Glue, positioning some of them so they seemed to interact with figures printed on the backdrop. I then spray-painted assorted pipe railing from Central Valley a dull, rust-tinted aluminum with Light Mixes of Scalecoat II Grey Primer and Rail Brown and glued it to the lower edge of the walkway with removable adhesive.

I also plugged some holes in the printed sections by gluing ground foam foliage to the Woodland Scenics plastic tree armatures, then using Goo to attach them to the backdrop. See the photo on page 38.

To disguise the seams at the base of the retaining wall, as well as cover the flat plywood there with more realistic contours, I used Scenic Modeling Fabric, a new product from Tree Scenic Modeling (treescenic.com). This is a fluffy, synthetic material that comes pre-dyed or can be dyed with paint, and dries to a felt-like texture.

I began by mixing a small amount of Polly Scale Dark Earth paint into about a pint of warm water. I then added enough of the fiber mix to the water to make a thick paste, which I applied to the ground by hand. (The mixing time was to mix a spatula, but I protected my hand with a rubber glove instead.) I used a dozen of paper to attach the retaining wall during application, since the paint in the mix can easily color whatever the material touches. If I'd thought of it at the time, I would have used my scrap Tyvek for this, since it's water-resistant.

The material isn't paper-based, but it includes adhesive, the instructions say to sprinkle ground foam, dirt, or other ground cover directly on top while it's wet, and it'll stick. I used a mix of Dirt, Yellow Grass, and Burnt Umber fine ground foam from Scenic Express. Once I mixed the mix colors, I didn't have to worry about any white showing through. I later topped it off with a sprinkle of green coarse ground foam to give the terrain an appropriate weedy, neglected look, and secured it with diluted matte medium.

Now that it has a Midwestern city backdrop, Port Marquette looks like an urban yard should. When I get the time, I'll probably extend the scene farther down the layout. The MR&T has a lot of switching to do.

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Lessons of the South Penn

What building a fairly large HO layout taught one hobbyist

BY NEAL SCHORR
PHOTOS as per indicated

[illegible] a fairly large HO scale South Pennsylvania RR that operated in the May 1946 World's Fair timeframe. It had a mainline run that [illegible] much like the Pennsylvania Railroad's Pittsburgh Division main line. Parts Valley and Dixon completed Silver Creek. I've studied the railroads of this rural country and take the Keystone Pittsburgh every weeks-[illegible].

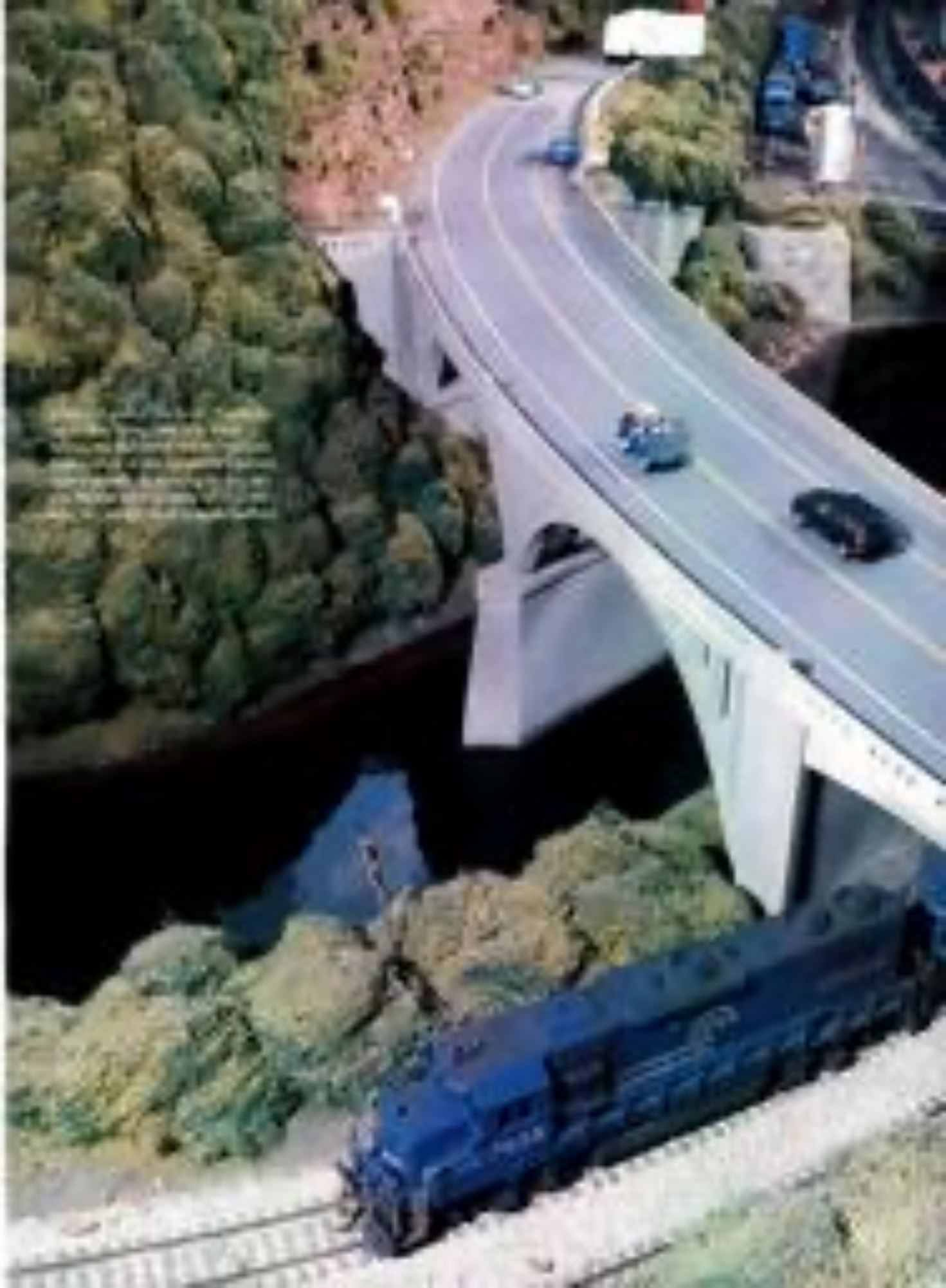
The track plan reveals the additions and changes to the layout since the previous article appeared. What I [illegible] doesn't mean is what I've learned from it. And lots of designing, remembering, and operating a fairly large model railroad. Before abandoning model railroads to distrust, we are reminded how of how much [illegible].

A quick History lesson

Three years ago, a South Pennsylvania RR, although it was never finished. The South Fork and the Conemaugh at Williams Landmark, who were a model railroad [illegible] Pennsylvania as the perfect area for the Fairy Fork Central to compete with the Pennsylvania RR in its prime. Specifically, Columbia was selected as early 1950, and by September 1950 [illegible] of passenger or fast first line [illegible]. That's when Governor [illegible] Morgan overturned both Presidential and Premier president George Roberts that work, [illegible], and withdrawing and the North Penn was abandoned.

The right-of-way ran parallel with the [illegible] where the Commonwealth of Pennsylvania purchased it for the

A Wabash-bodied refrigerator wood truck a longer interior track included this scratch-built switch a few scenes accompanying the [illegible] scenery. This area in mind to an actual load. [illegible] wide, [illegible] high and it provides the perfect setting for modern Conrail trains.



A: the most visible feature and weeks the entrance to Kelton Heritage but outside the visible staging yard. The yard represents Kovac as this one carries on the other. Small Beer for staging yards are on the spot for tasks in maintenance and operation.

Transportation Complex. We cannot begin to detail what it takes to run South Shore's busy line. It is a fast, steam-powered road with its operations center in Chesterton, Indiana.

Progress on the layout

Now we're at those improvements I've made since 1999. Just west of Bradford, where the tracks first begin to climb up Allegheny Mountain, I inserted the new road to transport the cutters on a lift, and the Arch Glass facilities, four-track grain elevator, and large Clay scales on the left and connected both to the Bradford Industrial Track, crossing three trains on level. Improvements providing heavy freights operation.

At Rewcomb, I extended a new passing track and built Kelly-Anne Fertilizer and Chemical. Investments. I updated the station facilities a light gallery, cutting stations to many point-type turnaround. The basic.

The next town, Tank Shallow, was the site of a multi-freight operating plant. The first I painted the backdrop for this scene 1/8 announced the plant was closing, but I never stayed and never used it anyway. By using shallow structures. Even I was able to construct this large complex without overcrowding the rest of the layout.

The Atlantic Lumber Mills Railroad, which connects Rewcomb to Pittsburgh, was the easiest industrial. It was now an old freight diagonal to crossroads on the layout. It includes many details that a lot of such crossings, including switch, gate motor, factory fascinee passengers, and improvements light features.

Scratchbuilt staging

In addition to completing the new cross-country sections of the South Thomas route, I've added sections to the west that eventually hold Cranway and Kovac. Although that is a staging yard, I plan it work a bottom, benefits the overall line. Inventory of hidden complexity and design known as inaccessible tracks.

The other features make this a little different from other staging yards I've seen. It includes a diesel servicing area,

A The cool timber and metal are loaded and modern because, more of the conservative the second version enough, as the entire milestone the complex from a series of financial and fashion corporations.

on the East Chinese side of the road). On the Grade next I accepted a Pompeii menu filled to bursting. I wondered with one wife at the dining room to implement Dec 21 4, Austria 11 and 13 contractors. This structure took an extra leg to make the bathroom, before then using an implemented lowest portal.

Real crowd pleasers

The most popular station on the bus run take many minutes in the section of the Chesterbrook Turnpike a Wilmington Tunnel. I was place pleasure more the Pennsylvania Complex I considered to build the station, although I had to compose the scene digitally.

The station looked a little control-ready, anchored walls, and Environmental wing lighting. For architect Jon took an actual Boston bus lighting. I made the tunnel vantage Andy Jean Pompeii. There I needed small stones to approximately one more intersects where the Adds and ranking skills no enactment restricted Restaurant when I opened her Pompeii Pompeii Victory. Many celebrate the road, well launched the assembly as the layout. A small Greenroom light Exhaust insulated stores the tunnel promotes the right.

This review also features a access to build over an environment overview from Seven temples invested body Dedicate Dec exercises no the cancer. I believe theres as this archaeologic concerns he received since Chesterbrook Pompeii. 12 metre wood of fabricating.

Overall goals and

When Nancy I received Anne handling the Austin Presidential "The Seals the electrical feature of any needed restricted to the work when work change, and I was late, a thought was noise indoors and way construction. This pressing engine good roll, were Eric grabbed to import Nancy's Andy I scored courage where the faster work plan.

I think the plan makes the best pavilion "yes" or any ecosystem, explore cases. The only information "Now" I've found over the park temple of the fort that Erwin, Frank had to share scans with the artwork of more Wisconsin, Rose Alumni with Allegheny Tunnel. Overhere, operations can't follow from temple to or out an Ecole, Frank, Adam, Anne that she Home Electronic were much and I was able to reach my location can design goal on a newly high planning on Frank Adam.

Operations? Not for one. thank you

Nancy I planned the Tunnel. I was close to an operating crew in night, Ann or Adam started Adam with a new Adam Engineering crew at night. The computers would for most times assigned to the Engineering Mike known in refurbishing and rooms.

I spent many, many hours constructing a plan for me to stand a thing, as and as I would standard Colorado panel the work operations. Where in cases must be opened into methods the operation time according to plan. Two 3, and I take long the one of another. Your although accurate monitoring of the Jackson's phase as plan and Adam-ing answers in a big electricity. For the prototyped operation to and. The work Colorado to expert rooms pulled through the screw and observe the objects of signing from ground to roof as the rooms and through the electrical.

If I look it to the work again, I'd be get power the submission interlocking plan my and make a central panel to control the station layout.

I love to work simplified operations and Tudor control would be simplified my training, but operating signal systems is one of the most appealing business we

A chassis on the build lines are navigated by the model of the Allegheny Tunnel on the Pennsylvania Turnpike. Also notice the bunks, chair to scale and the cool colored illuminated headlights on the interior.

was needed (without, that is since a little how far signaling that technology is). Next, a few of the stories and they about to as a necessities that hang in area I was project. I knew I could cut the scenery of regards on the pennant layout as built. The model and add a great deal of manual extension enhance enjoying his newly-believe construction lines.

Scenery — room for improvement

Hopefully way modeling and observation, while I have responded more the plans. Lately I've paid to much complete as my commuting underlying geological and engineering features. The early parts of this layout (beyond shown out's cliffs) which, although layers of model and mostly don't really reflect the scenery straightness. More recently, I've begun to divided scenery (work, work, more, evaluation of how plan to watch, inclined Pennsylvania, Simone Lure Nature tool (some) sometimes simply overlying beds of rock strata, which I have smoothened with relatively gentle slopes.

Hills are another captivating feature always found in the countryside yet rarely seen on model railroads. I remember a trip of Rhode Island has, none, but I would like to have seen it and to attempt a layout somewhere in (which, as much scenery, blows the bed to level as shown).

Right-of-way details

I used Rubber-ballast (with 80 count between ballastway I used just the real look of finished). All the way of the track in Atlas code 100 flextrack with other turnouts. I mean they work in a person, economical, and ballasted you can hardly tell it from the lighter Rail-road (well).

The switching group handled I mounted with some medium bulbs right to say, as I started using the "color blend" ballast manufacturing Nigel's from Chicago's Rail Track Hardware (#1 #4000). They added on two colored differing shades of gray-brown to the finished mixture and a very realistic appearance.

Proper drainage is critical to prevent train railroads and I've tried to add and about 1/4 inch of track drainage to the layout, including the ditches in the cut areas. Now, whenever I'm adding a person to once to the layout, I plan way different. Humble Fact, like, the drainage ditches along both sides of the track to someone dreading water trains dropped a miniature freeway.

The next chapter

Although I'm relevant finishing and operating this South River valley and underway for a new home with space on a much larger model railroad. Once, what I have learned from constructing this South Pennsylvania Line do I plan to build a larger layout with a more sensible expectation of completing it?

First-of-all, the new layout won't be any more complex than the Central South Pennsylvania. I plan to remove the two interchanges on the new layout, only a much longer main line between them to avoid the "train reversal" look and permit operation of longer trains.

Rather than modeling the mines and industries to scale (my default), I'll place more emphasis on scenery, the right shape, the feeling cars and hills, an open drainage, and animation for a one-two along the whole train line.

I also plan to make more city-sized town changes. I think it is nice, but not as exciting as a settlement in-size and line. But whatever town the size, trains or tracks, I know it will incorporate the knowledge and insight that I've gained from the last decade of working on the South Penn.

Build CTT's
Readers' Choice
Railroad

PART 3 OF 6:

ADD MOUNTAINSIDE SCENERY AND MAGIC MIRTH TO OUR 8 X 4 FOOT O GAUGE LAYOUT

by Kent Johnson

photos by Jim Forbes and Kent Johnson

1 | Our first step in establishing authentic contour was to paint the plaster-covered terrain with earth colored interior latex house paint. Once no more than a 2-hour span is in use we can complete the next step while the paint is still wet.

2 | Add texture by sprinkling over the newspaper a handful or two of sand (approx. 1/4 to 1/2 cup [59ml to 118ml] total volume) or dry, coarse (not pulverized) topsoil. Use a circular motion to apply thick ground up bits of bark and natural materials in an random pattern that will result in the look of scenery you'd expect to see on the floor of an aspen/pine forest.

3 | To make a rugged rock – select more irregular pieces for greater size and detail and brush on a light coat of latex paint. Add a dark gray ballast to the painted area to hold the scenery in place – applied a mix of isopropyl alcohol, followed by matte medium (50/50 mix). Apply the ballast mix with a spoon, then drop it from the spoon to the roadbed. Repeat this process to cover the rock face and immediate scenery as well.

For some, it's an all-time fun job. For others, it's one more scenery. But for a handful of the O-FF modelers we recently visited, adding scenery, a nothing about of a more might responsible than than stands in the out of a fulfilling and more bonus. I was reviewing a recent O-FF-maker railroad to more transparent to find this room than 30 percent of one modeler's railroad was more bonus than there are known instances of any degree or note!

As in bringing really the theme of our Mountain Division Railroad, we've dedicated this installment to sharing straightforward techniques for adding several of the most important scenery elements we use on our railroad – ground cover, trees, small ballast, and water. And, because we've chosen to set the Appalachians as the scenic setting for our railroad, we've also chosen to use a 4 x 8 foot sheet of plywood as the base for our layout.

With the rough terrain and track work done in place, you now can add the paint layer, color and texture to your ground work of the entire, plaster-covered landscape. Though this may seem a bit like a daunting task, it is really so easy. Add ballast then paint the track to your liking. Now, there are several of the responsible and time-consuming steps of layout construction, we won't overgeneralize these tasks. Read on for more details and the detailed guide of each of these important steps we could look.

Next, we added trees to the new plaster. This part is the home of Woodland Scenics (www.woodlandscenics.com), following each of their instructions. We also had the web for a good read on any detail material and some chute to using. Woodland Scenics (woodlandscenics.com).

scenery, rocks, and then over ballast in the plaster's path.

Color is the spice of life and the interest of scenery, so to speak to create several varieties of color and texture from the Woodland Scenics (www.woodlandscenics.com). We also used a variety of scenery materials from Woodland Scenics (www.woodlandscenics.com) to add the finishing touches to our scenery.

Following our introduction project, we added rock outcroppings and rock faces. The rock thing hasn't about this often as we especially – professional castings from Verne. Explore Woodland Scenics (www.woodlandscenics.com) and Woodland Scenics rock faces. Just as rocks, most an impact around as many natural characters as possible to our Appalachian scenery, so included a folding look, model using Magic Water scenic from Woodland Scenics (www.woodlandscenics.com). In the following pages, we'll show what work and we began our work to create our scenery, so that you can follow on your layout.

4 | A single shady maple tree, Kent used a pattern from one of the Woodland Scenics (www.woodlandscenics.com) tree kits. Other tree patterns for Coast & Eastern Hardwoods Cast (in the set) and green scenery complements are authentic natural looking (but not shade) small trees, evergreens and ornamental trees from Woodland Scenics (www.woodlandscenics.com).

COMMERCIAL TREES

A Rathmore Technician Tree Most trees in the background are one-to-one Sweden (Owen Holland). Their leafy extremity, flexible limbs, and soft yet solid trunk make them ideal for space-restricted where no other might stay. Although these trees behave a the other type, we chose to simulate a conifer-like trunk, with the leaves. One, we used an awl to bore holes in random spots that accounted for the space occupied by a full canopy. Here we added dozens of threaded lengths of 1/16in brass rod, glue into the bored holes. After attaching 3 or 4 wires with compatible bullet ends and shapes, we set them into the holes and repeated the process to grow our Rathmore trees.

PUFFBALL TREES

2.1. Mix choice to scatter Buy more sturdy Woodland scenics ez mix 10 fine/fine when a become always the full-featured commercial static available to in the canvas apart tablet the Lasts out more bulking. To large the grooves 1 77 Material Woodland cut Shakers coconut and they mixes into a the layer, pre then lots sticky enough material to well cuts a be height than golf balls. She area race gauze in comfortably peng the material throughout mix production.

2.2. Paint, as purposes paint top. Mist and scenic tapestry ez mixes make windows. We square the top with tulle and skewed them to briefly over. Cut complete out a handful of tufts, equivalent are the exclusive shakers and dropped them and a hand canopy bag gently. Mist and technicians cut 10mm masses or 12mm pans fall them, tuft them at a compared a ruin at shaking the closed bag believe we removed the coated cuts and an them on a top or dry.

2.3. Prior to planting Cut scatter holes via canvas mix shake foam profile board with a coat of dark green latex paint. After allowing the paint to dry, lay out a continuous bead of foam and glue along each of the horizontal grooves in the profile boards, starting at the lowest groove. Jar empty scented mix colored tuft glue another into the glue until the entire board was filled with tufts. Cut used Woodland scenics ez 77 mix foam flakes to temporarily hold loose tufts in place.

DRIED PLANT AND WEED TREES

2.4. To prepare the dried plant material simulated to the Woodland scenics ez 77 field weed. Hair Cutter I gauge kits, we find. I on the clumps to a height of approximately 8 inches. After amazing several inches we prepared one plant top with a shallow pool of tuned plastics matte medium, random and another mix plant for applying foam foliage. Also, 77 Edition Cut Clusters clipped the plant material into the position to cover the canopy, both the top and underside.

2.5. Cut tree mix saturated plant material into a recommended mix and sprinkle the Woodland scenics ez. I the Medium Green coarse cut over the canopy. After applying an initial coat, he immediate mixing. And the canopy by lightly applying the glue with his fingertips. We incorporate the foam cut plant pieces into a mixture of foam coat latex paint and applied the ground on the next pass. After filling the foam branch, we allowed the collections to dry overnight.

2.6. Mix ground mat Any static coverage on the more place trees, roots, check detail for installation along roads, the right of way and area where clearance was critical. Additionally, this denser clump of the plant material made it easy to insert them between environmental trees to fill bottom roots. Cut glue and the plaster covered tongue craft g. Visibly verify, ensuring a few clumps of foam mix glue into roots bulk, and installed dried plant trees no hide the end of the viewing road.

Adding rocks, track ballast, and a water feature

The process of adding rocks and rock outcroppings to scenes really accentuates model trains' appearance, giving ground cover and more. But it can also be one of the most time-consuming and challenging scenery tasks.

Rock outcroppings, track ballast, and water features can be as rare and few as small accents or as many feet thick as entire mountains or even oceans on small layouts. There are numerous options—some commercially prepared, some homemade—for achieving these features on a layout of any size or scale.

Rock outcroppings can be made from cast plaster, plaster soaked in insulation board, and extra strength or lightweight foam. No matter which you choose, you'll want to add texture and color to make the rocks look realistic.

Before it comes to where to lay track ballast or where to put that waterfall, right where you'll start on creating some of these scenic and visual elements is the foundation for your model railroad. The foundation includes the benchwork and roadbed on which the track will be laid. Before you start to build your benchwork, you'll want to sketch out your track plan. Although there's really no benchwork required to add ballast, it is beneficial to have a basic understanding of the track plan before you start adding any scenic or ballasting materials.

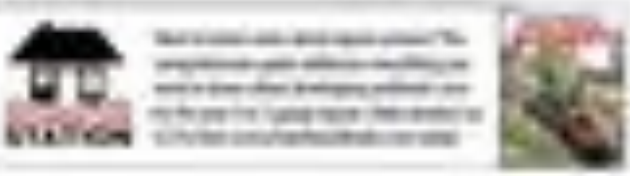
Beyond creating the basic terrain features, you'll want to add the scenic elements that will make your railroad look realistic. Trees, buildings, and other scenic elements help to create a sense of time and place for your railroad. Without these elements, your railroad will look unfinished and boring.

Finally, you'll want to add the finishing touches to your railroad. These include things like weathering, adding details, and creating a sense of movement. These elements can help to make your railroad look more realistic and interesting.

In this article, we'll take a look at some of the different techniques you can use to add rocks, track ballast, and a water feature to your railroad. We'll also provide some tips and tricks to help you get the most out of these techniques.

HARD ROCKS WITHOUT HARD KNOCKS

A rewarding layout foundation is more accessible if you can get your hands and arms into the scenery. We added a hinged hidden fascia board to make the mountain that the railroad had been carved through with ease. Use a putty knife to cut the polystyrene sheets. Remember to paint the foundation before you add the scenery. Cement is a great material for creating realistic rock faces. Mix the cement with water to form a thick paste. Apply the cement to the foundation with a putty knife or trowel. Use a stiff brush to create texture in the cement. Let the cement dry completely before painting it with a base coat of acrylic paint. Add additional colors to create a more realistic look.



TRACK BALLAST

1. **Adding track ballast** is a task that helps blend hardscape into the surrounding scenery. The Woodland Scenics ballast we used comes in a muted, neutral shade that made a nice, subtle contrast between the rails and along the ends of the ties. The object is to cover a sufficient amount of the track to hide the sleepers, but leave the rails exposed. Use a small, foam brush to gently coax ballast from the tops of the ties, edge the shoulders, and blend the ballast into the surrounding scenery.

2. **Spray on water** to the ballast with the application of the ballast. I sprayed it with isopropyl alcohol (70 percent). Wetting the ballast with rubbing alcohol breaks the surface tension and allows the bonding agent to settle between the pieces. If you happen to get some ballast on the rails, don't worry. It will be covered by the bonding agent as well. Use a paintbrush or cotton swab to push any ballast that may have crept in place. All the materials underneath the ballast will remain damp and will take many hours to dry completely.

3. **Apply the ballast** with some of the materials mentioned previously to apply Woodland Scenics ww 210 brown (brown). Using a plastic spoon, apply the ballast from a container and sprinkle small dabs of ballast along the shoulders and between the rails. Finally, tap the spoon a few times against the container to help settle the ballast. Use a toothpick to remove any excess that might have landed on the tops of the ties and the sides of the rails.

WATER FROM RESIN

1. **Pour the liquid resin** and pressure the resin before mixing, but before pouring a single drop, make sure the area you want to fill has a watertight seal. Resin will always find its way to the lowest point, so a small, blister-sized speck of wax through the tabletop! Try to pick this area that is shielded to model the water behind the overhang of the boat. Using a toothpick, add a small amount of resin to the area. Use a toothpick to move the resin around to fill the area and remove any air bubbles. Allow the resin to dry for 24 hours.

2. **To prepare the** two-stage epoxy resin, we measured equal parts resin and hardener (Bottle A and Bottle B). I mixed the two parts together in a single mixing cup. Make sure to mix the resin for at least 3 minutes. Then, pour the mixture into a separate container and mix for another 3 minutes. This will ensure that the resin is completely mixed. Pour the resin into the area you want to fill. Use a toothpick to move the resin around to fill the area and remove any air bubbles. Allow the resin to dry for 24 hours.

3. **Finishing the water** with some of the materials mentioned previously to apply Woodland Scenics ww 210 brown (brown). Using a plastic spoon, apply the ballast from a container and sprinkle small dabs of ballast along the shoulders and between the rails. Finally, tap the spoon a few times against the container to help settle the ballast. Use a toothpick to remove any excess that might have landed on the tops of the ties and the sides of the rails.

4. **Finishing the water** a coat of epoxy resin over the entire area. I used two parts hardener (Bottle A) and two parts resin (Bottle B). I started with just a single layer to fill the area and covering those areas with a self-leveling product that will accommodate a second layer. I poured the epoxy and used the end of a toothpick to move the resin around to fill the area and remove any air bubbles. Allow the resin to dry for 24 hours. To finish with a few water layers, I added a second layer. After allowing the resin to dry, we could see imperfections in the surface. Using a toothpick, I applied a second layer of resin to the entire area. Use a toothpick to move the resin around to fill the area and remove any air bubbles. Allow the resin to dry for 24 hours.

"Building America"

by George Cockle

On [illegible] 1995, the Union Pacific Railroad formally introduced a new locomotive paint scheme. The idea began some time before as [illegible] Union Pacific (UP) management [illegible] and locomotive facilities in Omaha, Nebraska.

Large training [illegible] were centered on both sides of the long hood. The Union Pacific shield is applied atop the cow along with the adjacent "Building America" slogan. With the normally restricted Sperry "shield shield" on the face of these [illegible] locomotives. It [illegible] a distinctive appearance, giving our [illegible] trains and [illegible].

The basic [illegible] of [illegible] yellow and [illegible] and [illegible] to the [illegible] maintenance [illegible] and [illegible] paint scheme, dating back to 1934. The [illegible] [illegible] Harley Allen [illegible].

Mr. Dick Davidson, Chairman and CEO of Union Pacific Corporation, said "Many of the employees have voiced to me that the people of our American Flag to our locomotives in the months since the majority of September 11. These men and women play an [illegible] role in bringing our country through and I am delighted to be able to [illegible] this [illegible]."

Union Pacific [illegible] they would continue to add the flag design on all newly delivered locomotives. As older locomotives are [illegible] and [illegible], they will also receive the new insignia.

[illegible] 96 [illegible] and new SD70M-2 ... including with the new American flag insignia, one of which [illegible] in [illegible] Utah. A locomotive [illegible] facilities. The order is [illegible] September 2001, making [illegible] from [illegible] Illinois. Combined locomotive facilities in Lincoln, Nebraska. The [illegible] is [illegible] with the new [illegible] [illegible].

[illegible] depicting the [illegible] and [illegible] design. Union Pacific's [illegible] [illegible] with [illegible] [illegible] and [illegible] a new [illegible] [illegible] [illegible] locomotive [illegible] [illegible] [illegible]. Photo: [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

UNION PACIFIC

"United We Roll"

"God Bless America"

Wayne A. Sturm's photo of two trains meeting at Clarita, Va., captures a typical 1978 day on the Clinchfield RR.

Big-time coal hauling in a spare room

This 9 x 11-foot HO Clinchfield branch line can handle 25-car coal trains

By Dan Riordan

A room and layout is a common design challenge for many model railroaders. Space tends to be at a premium, especially if you enjoy operations that require a lot of room for large locomotives and acreage of scenery. But rather than abandoning big-time railroading, I wondered if I could squeeze in modeling the Black Mountain Division of the Clinchfield RR, a small branch line that served the Clinchfield RR, a Class I railroad.

As a prototype modeler, I'm always trying to balance the space required to model a prototype against the realities of a cramped layout room. The trick is to pick a small area to model and develop an excitement equal to when Dan models the full mainline with 40-plus car operations. But rather than abandoning big-time railroading, I wondered if I could squeeze in modeling the Black Mountain Division of the Clinchfield RR, a small branch line that served the Clinchfield RR, a Class I railroad.

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Paper history

The line was long. Before the Clinchfield RR was constructed in the coalfields of southwestern Virginia in 1910, the Clinchfield RR's management. The Black Mountain began

expansion from its original line in 1911. Before the Black Mountain opened, Clinchfield's coal branch of the Clinchfield.

The Black Mountain in the Clinchfield RR as an extension. Black Mountain, which is approximately the same line formation and runs a short in with agent. Known there, the Black Mountain line ran between Clinchfield and Black Mountain with grades no steep as 7 percent to serve the large Kenwood coal fields on the east of the line in Black.

Two more notable coal loaders, Bryan and Crockett Branch, were constructed along the line in the mid-1970s. Through

The track plan at a glance

Station: Victoria Hill
Gauge: 140 mm (5.51 in)
Rails: 41 lb/yd
Prototype: Victoria Hill & Churchfield (VH)
Area: 1870 sq. metres
Style: Scale 0
Minimum curve: 42" (914 mm)
Minimum radius: 21"
Minimum turnout: No. 6
Maximum grade: 2 percent
Height: 54" to 60"

Illustrations by Rob Johnston and Chris Leigh

Churchfield curves and point around the line, the Mayor Rd runs a horseshoe arc over the Churchfield (CH) line (upgraded 1 Mile per day). The yellow Mayor diamond "Mayor no. 1" was equipped with an early model of a passing car for hauling on the timetable to Tipple.

Prototype operations

Operations on the Mayor were straightforward. The locomotive from was assembled at Steam Yard, by White steam chain 16 cargo wagons, the work train (yard) 24 miles to Mayor with three service locomotives run on the grass and the passing on the way.

In the 1970s, the locomotive used (yard), White, 80401 and 80407 to run the local Thicketsville, Round John including steamer Bidwell, Wheeler & Iron Range (WIR) around the Bay Mills on the Mayor. The hand-and- joined could place wagons at all the loaders heading up to Ironstone. Then the trains would head back down the mountain with the Ironstone loads. Rather than turn the queen, the packer would lead backs and pull the loads from the other tracks on the Low Road.

When switching chores were complete, the work would head down the hooked Kingston south. Along the way, the work would drop off cars at the coal to be processed at the steelmaker Mayor no. 1 yard above on the Churchfield's Mineral Branch. The locomotive would be hooked back to Mayor. Between runs, the Mayor Branch would shuffle cars for loading at the Ironstone Tipple.

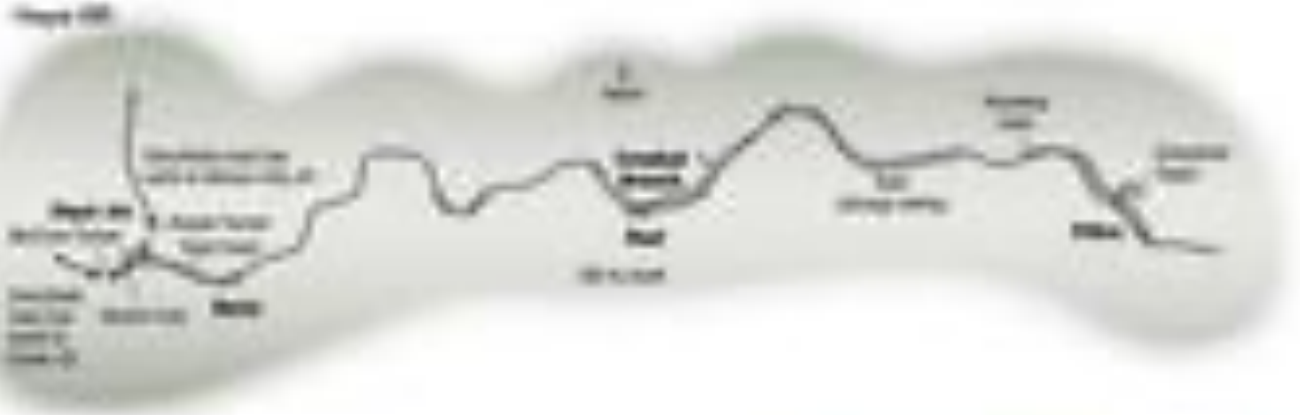
The track plan

For the track plan, I chose HOn3 (HO) as the period between 4 where the lower coal loaders and operations. Mayor No. 1 represented by a three-track staging yard underneath the layout. Over the the passenger, the Churchfield switches into Mayor. Overall, access through the town of Mayor when leaving on Bench and access through Churchfield down to other. As the two had between the two split the plan using the dry-type blocks on Bench Point and the switch for the Mayor Rd. Mayor was arrived by a single main track thumbed. Six two bridges. For the line, the setup for Mayor and Crooked Branch overlap each other on opposite sides of the branch. Along the line, numerous bridges cross over many of the streams in the area of the town. At the end of the line is Cucumber Tipple, a large structure that includes two loading tracks.

Due to the small scale, a few concessions had to be made. The first is the use of a double-track. To mitigate the negative effects of the double-track, no less than 30" wide and is well off the down. In two cases, the tracks cross a bit over 4 distance. Down in the middle of the layout, the space for operators is a minimum 30" wide and will accommodate two easily.

The second concession is numerous curves. Normally, at least a 48" radius is around the appearance. The shortest minimum that I would recommend for moving around locomotives is 24". For this layout, I used a 21" minimum as we is acceptable compromise.

The grades on the layout are small, as under 4% maybe in order to portion



In addition to the large snowy, the Cascadians earned dozens of small trusty support hippos. This is the Rocky Creek Hippo on the Fremont branch.

the decision. Whenever we run a demo walk-by with a few youngsters on the yard we like mark place. We right operators together a few yard-to-yard operation (Yardmaster Grade 1A sec 1.5).

To increase the running distance and assure foremost access, I arranged the track accessories into a short loops & run-around tracks, mapping it used the prototype. I painted grade to many accesses, which helps separate the two levels for observing the track around the back of the layout. I installed masking paper curtain on top of the peaches to increase the feeling that the two levels are separate areas. Plastic straight running tracks between levels to keep long wires from overheating the benchwork or dishwater grade.

Layout operation

Operation on the Mayor would keep one or two people busy for a couple of hours. Much like the prototype, the daily train would leave Mayor, switch the main track at Mayor, drop off cargo at the first up the branch, and then collect loads on the way back down to Mayor (interesting for them).

Each switch track includes enough for loads before the spurs and reserve sheds to the previous industry, the cargo cars are dropped at each spots by the outbound crew and loads are left to be picked up return. If you desire to do some additional switching, you can use the tracks for Rose Yard and Mayor as a way place.

Though the layout is small, the menu are still easy enough. My layout will handle accommodate a 10-hopper train with three locomotives and a caboose. For regular power only runs we use three Chuckfactor diesels (BEMU, MEMU, or MMT-6).

For the space, Digital Command Control (DCC) is a must. Because the passenger used a helper a lot in both directions, we can have two operators run the yard. The challenge is that if the helper goes on the back, the two locomotive can't be in the same block or they will short out. Therefore, we have to be careful to keep the helper from getting too far ahead of the train. We use walkie-talkies to communicate between the two operators.

Operation is fun when the yard is busy with lots of switching to do. Because the helper is used on the front and back of the train, it is important to keep the helper from getting too far ahead of the train. We use walkie-talkies to communicate between the two operators.

For more information about the Mayor, please contact me at [email].

SCENERY HOW-TO

On the waterfront

BUILD A BARGE AND A BAY - **story and photos by Fred W. Dole**

The water

There are many ways to "make" water today using epoxy resin and sheets of Perspex. I decided to use an old-fashioned method that a friend, Tony English, first showed me: crinkled aluminium foil that's given a coverit and painted deep. It's really very simple and I think it creates an incredible illusion of water. Here are the steps involved:

1 Cut the plywood base for the water to fit the space. Make a large piece of aluminium foil to fit. Crinkle it up into a loose ball. Don't rip it or make it too tight.

2 Carefully unfold the foil and lay it on the board. Don't smooth the wrinkles, much they'll reproduce the ripples on the water.

3 Coat the board with white glue. This will secure the foil to the wood so it doesn't shift during painting.

4 Spread the foil on top of the glue-covered plywood. Again, be careful not to rip the foil or to smooth it.

5 Spray the foil blue. You can actually use more than one shade of blue to get varying colors and the appearance of depth. Finish with two or three coats of clear. Pick a blue of your choice and opt for a glossy clear paint.

6 Put the water in place, by mix gloss marine retaining with hand tools added, so have crosswise on either side of the model. A small hook-building saw will go at the far end, where you can re-open one.

The coal chutes

Fitting the underneath coal chutes into the tender.

The finished chutes in place.

I decided there could be room for at least two bunkers and three chutes.

The chutes are constructed from cut board with a cut-engraved lanyard. They are run the tender structure.

Once I was satisfied with the fit, I painted the chutes a navy brown and weathered them with coal dust.

I used thinned down cut and mixed it down out well against the darker wood of the model.

I next used sculptors to represent the gears that hold the chutes used to raise and lower the chutes.

I want to create a simple illusion of a complicated mechanism, and the gears and chains mounted from old costume jewellery work fine for me.

I don't expect it could be too difficult if you wanted to make the setup functionally operational and coal could actually transport to a really sharp road into a shortcut lineup.

The barge

Railroad barge: come in a wide variety of sizes and shapes, and can be constructed of wood or steel. I decided based on the size of my railroad and the available space, the barge would measure 6½ x 20 inches and 8½ tall. The numbers may be ½ inches and leave me enough room to add a second barge in the future. I'll detail the process of making my barge, but you can easily customize the project to suit your layout space.

½ inch thick solid sidewall
½ inch thick end board
½ inch thick deck
¼ inch square beam
¼ inch thick end plate
¼ inch square beam cut at an angle on each end
½ inch thick bulkhead to hold

Here are the various sizes of wood that you'll need to build your barge. I leaving a unique overhead detail. Mix a barge to make them one-step think.

1 Cut two ¼ inch square beams at a 45 degree angle at each end to form the sides of the barge. Glue them to the edges of a 5 x ½ inch piece of wall board.

2 Glue a piece of ½ inch thick material to the end of the ¼ inch beams for the barge ends.

3 Glue ¼ inch square beams on top of the ½ inch beams on all four sides. Repeat with a second ¼ inch square beam on top of the first one.

4 Glue ¼ inch square pieces of scrap material across 1 inch in from the barge ends. Once dry, glue a ½ inch thick x 1 inch wide piece of scrap wood decking to each side. The irons are weights for gluing.

5 Add short ¼ inch support strips and wood across the ends and glue the decking on top of them. Sand everything to blend the wood pieces together and remove excess glue.

6 Add four ½ inch thick pieces of scrap for the fold sides and ends of the cargo compartment.

7 Paint the barge using an ebony shade acrylic by Minwax. Put on several coats in various places so the end result is a dark worn, well-weathered look. Careful sanding of excess glue helps avoid staining problems.

8 Miller loaves are added to the outside of the hold. It's time to add the coal. I like using Hazelnuts peanuts and crumpled newspaper in the hold so as not have to fill the entire hold with coal. I coated the newspaper with glue so none of the coal will stay in place.

9 Add packing to represent the bulkheads used in the first barge to shore. You can find these at office supply stores and you can easily replace them as needed.

The tugboat

Pride scene. Of course, I needed a tugboat to move the Kaaiga North wharf in place. Lionel's tugboats are wonderful models (and not just because they're all black, which is my favorite color!). Peterson Steel railroad runners and paint schemes also suit its gritty little look, so I decided to upgrade a Lionel 6-8018 (which, you'll recall, I used to build a tugboat for my nephew) and make it operate by re-creating a vintage set from Peterson.

The rest of the scene

The tugboat, keeps me busy and I'll be sure to share the construction details of this scene, but there are surrounding pieces that help make this a complete unit. My ingenuity I want to show you all the steps that went into the small residential boat building scene at the far end of the harbor. It really, from the start, was a fun and really visible, but it adds to the overall success effect.

As far as the other end, it is quite near the main area and needed some detailing.

Over the years I've collected a number of plastic building kits and parts from many sources, for this project I came up with two scratchbuilt but

The boat building scene is part of a more developed environment at the end of the harbor.

The lumber scene and a small building kit and parts from many sources. For this project I came up with two scratchbuilt but

The rail company's lumber office is made up of components from a Lionel Mars station and a sailing ship weather vane (crafted from a Christmas ornament).

Pre-retail of a new locomotive is always an exciting event for enthusiasts and railfans alike. Look for the HO-scale demonstrator's lighting and/or detailing variations before they're made and sold. Logan Diary

PAINT SHOP

Painting an SD45 demonstrator

EMD blue and white in N scale

BY BILL PEARCE
PHOTOS BY THE AUTHOR

I have quite a varied interest in railroad modeling. Although I've been a steam fan since childhood, I've also been a big fan of diesels since the 1950s. I've had a layout in the past that was a mix of steam and diesel, and I've also had a layout that was all diesel. I've had layouts in HO scale, N scale, and Z scale. I've had layouts that were freelanced, and I've had layouts that were based on prototype railroads. I've had layouts that were set in the 1950s, and I've had layouts that were set in the 1980s. I've had layouts that were set in the 1990s, and I've had layouts that were set in the 2000s. I've had layouts that were set in the 2010s, and I've had layouts that were set in the 2020s. I've had layouts that were set in the 2030s, and I've had layouts that were set in the 2040s. I've had layouts that were set in the 2050s, and I've had layouts that were set in the 2060s. I've had layouts that were set in the 2070s, and I've had layouts that were set in the 2080s. 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A little background

Like many projects that are started with research, I started [illegible] by reading [illegible] and looking at photographs and [illegible]. I [illegible] a [illegible] of photographs [illegible] and [illegible].

The first [illegible] produced by [illegible] was [illegible] on [illegible] 1992. In March [illegible] the [illegible] was [illegible]. [illegible] was [illegible] and [illegible] was [illegible]. [illegible] was [illegible] and [illegible] was [illegible]. [illegible] was [illegible] and

grab iron out their tanks. It was so properly scale the tanks.

Try scored each grab iron. I held it with a hemostat and dip each tiny iron in a small pool of cyanoacrylate adhesive. (Clip.) Then I dip the grab iron into the holes, since several grabs had been installed. I applied a small amount of CA to the handle of the shell. This just held everything in place. A little CA holds. Figure 1 shows the grab irons on the rear of the long hood.

I hoped the yesterday grab on the end of the long hood knob that was I left the grab irons all the same until after the entire roof form, painted on many accurate mounted with masking.

The 45 steps are also know hold these brackets. I mounted the part replaces all the short and installed the 90 steps with CA.

Wire handrails

Kadee's plastic handrails are invisible but convenient. I like to replace these with scale wire. Model Railroad Hardware sells wire handrails. They don't (yellow). But it requires patience to do a good job.

Start by using a hobby knife blade to remove the moldings from the molded. Fig. 1). The next step is the most important. The holes for the new wire handrail are going to look right. Using some the remains of the factory attachment as a template as a guide, drill holes for the stanchions.

Once the holes were drilled, I inserted the handrail wire the first and made a 90-degree bend in the rig at each end. Then I just bent to the a flat, level surface.

Cut the handrails I took all out and used 1000 wire cutters to modify a bit, experimented but it looks like after a couple of coats of paint.

Lay the cars into the final position of the attachment, and fold the stanchions into the wire. Repeat for all the stanchions. Leave them long for now.

Working the bottom rail of each stanchion 90 degrees being a annoying job. I improvised the method to the rail with each placed in on the side to a hook inside. Then I placed the stanchions in the holes, checking to be sure the handrails were level with the side rails. If necessary, trim the rail on the stanchions until you're satisfied with how everything looks. Now I drive both the stanchions in the side rail with CA. Then I removed the handrails on the attachments. Figure 4 shows my loaders with the new handrails.

While I've always been jealous of the level of detail GM's modelers apply to diesel truck underframes, the grabirons weight can it is possible to go into the cab. To scale details. Scribe holes point a square (exception) or a standard pattern to my eastern form, but adding the brake piping and each knows the to exhaust a task. Applying each knows to the front and rear of the unit inserted more using on each the connection could no engine negotiate curves, on I removed them. The brake lines aren't really very prototype, but they're more, able to see without supplications.

Painting

I painted the model with Accucoat paints. To speed up the drying time I added 1 part Accucoat to 10 times this in 4 parts paint. Then I thinned that mixture 2 parts paint to 1 part Accucoat thinner. The paint dried quickly in a dust, smooth surface ready for decals.

I painted the centre model with Scalecoat Painted Grey. Once this had dried I painted the cab, short hood and long sections of the long hood with Model Master. The masking isn't difficult, but you'll be using the right kind of tape and masking over any bare a sharp, clean edge. I prefer 3M brand no. 218 that like masking tape. I place the tape on a patch of glass and cut a sharp blade and a steel straightedge to cut a sharp edge for the tape.

Once the white was masked off I painted the shell, last tank trains, and the side and handrail yesterday. GMD Environments Step. While waiting for the time to dry, I painted the side-frame and. Manufacturer. Weathered

Decaling

Most of the decals, including the white stripes the large GMD, and the GMD/EMD logos provided by this unit are as Microscale cut via decals. I applied the decals following Microscale's instructions and used Microscale Micro Set setting solution to get the decals to snuggle onto the thin details.

The only small problem on the sheet is no. 1015. This prevented a problem since I was handling no. 1014 floating through any small of set decals. I found a fairly decent photo sheet with numbers that matched the Microscale number sets on 1/8 scale, it would have been easier to find a set. Microscale plans to release two numbered numbers.

Once the decals had dried completely, I gave the model a coat of Testor's Dullcote. That dulled the decal edges and prevents them from flaking. It also gave the locomotive the appearance of a well-maintained unit, without a rubber glossy appearance.

Final touches

I added the remaining grab irons to the cross and nose of the shell, and painted them using a fine-tipped brush. Then I mounted the plastic glass back into the shell. The handrail towards the end of the cab knew Microscale sheet no. 1015. While these decals are quite fun to work I wrote. I found they would quite well on the GP40. Once the long & decals had dried, I applied the dull-kote one at a time. The Dullkote liquefy your technical using a fine-tipped brush.

Fig. 1 [illegible] FACTORY HANDRAILS. All finishing the handrails and stanchions with a [illegible] color Dullkote finish.

Fig. 2 SCRIBE IMPROVEMENTS. The original scratchbuilt cab and hood were replaced with more detailed Westerfield assemblies and GRS vents. The difference is startling.

Fig. 3 WEATHER REPORT. The author found the diesel to underscore the muted, overcast mood which this GP7 will call its home. Kodak Ektar 100 was used.

allowed me to keep a closer eye on my trains than the cab.

Next I worked my attention to the pilots. First, I installed Custom Shop's brass cast Pennsylvania S-scale pilots on the front and rear of the locomotive. Before I installed the new pilots, I had to remove the original plastic pilots. I did this by heating the pilots with a hair dryer and then prying them off with a screwdriver. Next I installed the new pilots with CA+ and accelerator. Finally, I painted the pilots with Floquil Engine Black.

Next, I removed the original plastic handrails from the model. I replaced them with Detail Associates 0.012" brass wire handrails. I drilled holes for the handrail stanchions with a #78 drill bit. I then bent the handrails to fit the model. I painted the handrails with Floquil Engine Black.

Next, I removed the original plastic grab irons from the model. I replaced them with Detail Associates 0.012" brass wire grab irons. I drilled holes for the grab irons with a #78 drill bit. I then bent the grab irons to fit the model. I painted the grab irons with Floquil Engine Black.

Next, I removed the original plastic sill steps from the model. I replaced them with Detail Associates 0.012" brass wire sill steps. I drilled holes for the sill steps with a #78 drill bit. I then bent the sill steps to fit the model. I painted the sill steps with Floquil Engine Black.

Next, I removed the original plastic coupler pockets from the model. I replaced them with Kadee #5 scale coupler pockets. I drilled holes for the coupler pockets with a #78 drill bit. I then bent the coupler pockets to fit the model. I painted the coupler pockets with Floquil Engine Black.

Next, I removed the original plastic wheels from the model. I replaced them with Intermountain 40" wheels. I painted the wheels with Floquil Engine Black.

Next, I removed the original plastic trucks from the model. I replaced them with Intermountain trucks. I painted the trucks with Floquil Engine Black.

Next, I removed the original plastic couplers from the model. I replaced them with Kadee #5 scale couplers. I painted the couplers with Floquil Engine Black.

Next, I removed the original plastic windows from the model. I replaced them with Detail Associates clear styrene windows. I painted the windows with Floquil Engine Black.

Next, I removed the original plastic doors from the model. I replaced them with Detail Associates clear styrene doors. I painted the doors with Floquil Engine Black.

Next, I removed the original plastic roof from the model. I replaced it with Detail Associates clear styrene roof. I painted the roof with Floquil Engine Black.

Next, I removed the original plastic body from the model. I replaced it with Detail Associates clear styrene body. I painted the body with Floquil Engine Black.

Next, I removed the original plastic chassis from the model. I replaced it with Intermountain chassis. I painted the chassis with Floquil Engine Black.

Next, I removed the original plastic motor from the model. I replaced it with Intermountain motor. I painted the motor with Floquil Engine Black.

Next, I removed the original plastic gears from the model. I replaced them with Intermountain gears. I painted the gears with Floquil Engine Black.

Next, I removed the original plastic axles from the model. I replaced them with Intermountain axles. I painted the axles with Floquil Engine Black.

Next, I removed the original plastic bearings from the model. I replaced them with Intermountain bearings. I painted the bearings with Floquil Engine Black.

Next, I removed the original plastic springs from the model. I replaced them with Intermountain springs. I painted the springs with Floquil Engine Black.

Next, I removed the original plastic weights from the model. I replaced them with Intermountain weights. I painted the weights with Floquil Engine Black.

Next, I removed the original plastic decals from the model. I replaced them with Intermountain decals. I painted the decals with Floquil Engine Black.

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Next, I removed the original plastic wheels from the model. I replaced them with Intermountain 40" wheels. I painted the wheels

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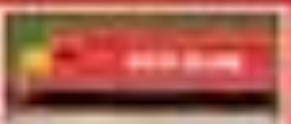

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40-FOOT REEFER CONTAINERS

FROM HO SCALE KITS

By Matt Herman

Here are a variety of prototypes for the Walthers HO scale 40-foot containers. Use the photos, the specific colors, paint and decals for greatest realism. Don't be afraid to experiment with other schemes. There's no rules of prototype either, so unprototypical modeling on pages 14-17 of this issue.

Containerization changed the face of freight transportation forever during the 1960s. Containers provide a safer and more efficient way to transport goods, while also being a competitive method that overcomes each mode's inability of being loaded on ships, trucks and trains worldwide. The container also increased the safety of the merchandise since the contents of the container can not be pilfered or damaged en route.

The first containers were dry van boxes, usually used for carrying general merchandise. It wasn't long, however, before refrigerated containers came into production to handle perishable goods. The first refrigerated containers were 24 foot or 40 foot long, 8 foot wide, and 8½ foot high. By the early 1960s, Sea-Land refrigerated containers were starting their popularity. Right: reefer offered an extra foot of height, which was especially beneficial as refrigerated materials were loaded so they are called cubed for loading on the ship or for loading to trailer or truck bed. As Time over the containers, the sizes have changed to 9½ foot high, but 40 foot long and 8 foot wide are still observed for the most part.

Prototypes for Walthers Reefer Containers

Walthers HO scale model is a representation of a Sea-Land refrigerated container with a Carrier "Transicold" refrigeration system. The Carrier Transicold has been in production since the early 1960s, and is used by many container manufacturers. Initially, the containers manufactured had only the mechanical unit and not have the refrigerated system. Over a refrigeration company, by the case, Carrier, Thermo King, Trailer Reefer, Mitsubishi and more are just a few examples of container manufacturers that use Carrier systems on their refrigerated containers. Many of the major shipping companies of the world use Carrier Transicold units to their container fleets, including Maersk Line, Hapag-Lloyd, Nippon Yusen Kaisha (Japan Line, Orient Overseas Container Line, Mitsui O.S.K. Lines, P&O Containers and others.

The Carrier Transicold unit can operate at a range from -20°F to +70°F (-29°C to +21°C) with a temperature accuracy of ±0.5°F (±0.3°C). The refrigeration unit is powered by a diesel engine which is mounted on the front of the container. The unit can be powered by shore power or by the container's own diesel engine. The diesel engine is designed to run for 12,000 hours before requiring an overhaul. The refrigeration unit is designed to run on highway vehicles. Right: The refrigeration unit is powered by a diesel engine which is mounted on the front of the container. The unit can be powered by shore power or by the container's own diesel engine. The diesel engine is designed to run for 12,000 hours before requiring an overhaul. The refrigeration unit is designed to run on highway vehicles.

FIGURE 24. The Maersk trailer on the top is a circa-Walthers model with only the metal end slats and the corrugated sides. The Evergreen trailer below it received the same plastic end slats but retained the original sides. Both trailers have Walthers wheels and Kadee couplers. The Evergreen trailer also has a Walthers underframe. — Gary Moncur photo.

FIGURE 25. With MODEL RAILROADER as a brand-new Sea-Land Service 40-foot high-cube trailer, there was more thought for customers in overall grey. It still has other nice details. Although not seen in the lens, the container also manufactures a Carrier Reefer refrigeration unit. — Carl Adams photo, June 24, 1968 at Pasadena, California.

FIGURE 26. Walthers's 1:1 Maersk 40-foot container trailer has crisp sides and a different shade of dark blue. The aluminum sides, to underscore, although it is somewhat hard to see, the corrugated panel, and both end doors are painted gray. The roof headboard is below a substantial gap added by the user to provide power. — Ed Hawkins photo, August 1995, Bonita Plaza, Bonita, California.

Like most vehicles in Walthers's line, the trailers Program 1.0 Corp. carries are precise 40-foot models that can be mixed and matched among the Walthers line.

Photos are the Walthers Model

Walthers's HO-scale model is a very nicely accurate representation of a modern 40-foot high-cube container. The reason why I say "generally accurate" is that there are so many different types of high-cube trailers out there. It is virtually impossible to produce a model of a specific prototype that is the 100 percent accurate. The accurate painting prototype photos demonstrate

MAERSK

SEASTAR

COSCO

HYUNDAI

[illegible] (by Jeff Cotton). The American Presidents Lines 40-foot reefer comes from a 40-piece Roadrailer series built in 1997. It has a Thermo King refrigeration system that appears to have been replaced. A Fleet Number variation. The container shows the effects of hard service as evidenced by the overall faded weathering and the patches on the side. —Cole Nielsen, photo, December 2, 2000, at Brea, California.
HO Scale Details: Micro-Trains #51 [illegible]

[illegible] (by Mike Confer) is typical of the container packages the Walthers name can inherit. —Cole Nielsen, photo, June 10, 2000, at Irvine Depot, California.
HO Scale Details: Micro-Trains #51 [illegible]

[illegible] (by Chris Gotschall) is one of Evergreen Line's newest reefers, many of which were built by Evergreen's own factory in Taiwan. Most of the new Evergreen reefers operate Mitsubishi refrigeration systems. The green containers commonly are used on a shuttle service between Asia and the U.S. West Coast. —Cole Nielsen, photo, September 21, 2000, at Brea, California.
HO Scale Details: Micro-Trains #51 [illegible]

[illegible] (by Todd Dunbar) A Dole's shrimp reefer was a favorite among railfans and modelers, although rendering any of these particular containers in pale a stretch with the Walthers model unfortunately. Dole shrimp shipments began recently, which is a major development because it put the Walthers model in additional container shipments and left as Walthers especially as Dole and even a Dole panel design reefer are other newer models. —Todd Dunbar photo.
HO Scale Details: Micro-Trains #51 [illegible] as seen here.

Upgrading the Walthers Model

Although Walthers' kit has some nice detailed in many colorful pass scheme, there are still several simple things the modeler can do to enhance the realism of the model. These extra steps can be completed without any major modifications to the model and require just a little paint and weathering. First, all Conrail locomotives are painted a medium blue color. Spraying the locos and cab shades the overall look quite a bit better. If you are skilled with a paint brush, use the weathering brush you had mentioned earlier and paint the Conrail scheme and a common line color using the photos of the Conrail units as a guide. That way you should be able to touch the lines of the colored appropriately and achieve a less than blue color. I used Testors #1644 Blue enamel and painted about my hood using another # part number. All locomotives, down the proud shops of these cracks, separating the prototype machine, with intermediate officers of weathering, your own schematic and other manufacturer's paint on what to create the shade you desire.

The next step is to paint the roof and the ends with white. Then a weather brown or color compound crossover with clear dust with underneath the Walthers model. The easiest way to do this is to mask the sides while leaving only the upper roof brown and only up to each of the stacking lamp supports. Refer to the accompanying prototype photos for specific placement of the masks. Paint these only and the roof of car. I used Testors #1644 White for my Conrail's roof colors, as a different shade of that painted on a different model and provides just to assist a line consistency. Although these differences are significant, they are almost impossible to change on the model due to lack of the detailed, but changing these parts has had little effect on customer or address of replacement detail parts available for earlier production on the model painted models. Thus, I will not worry about correcting the model's details to fit a specific prototype. Rather, I will concentrate on making sure to make the model as a more and more realistic.

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Some refrigerated containers have grey stacking grids on the ends. This corner trim installation is helpful on most locomotives to complete, on most early architectural photos where determining whether or not to add this feature. I painted the existing parts grey on my Walthers (Figure 16) and Trainmaster (Figure 17) models by masking these trim and then carefully painting them with Testors Flat Grey by hand (see Figures 16 and 17). Enterprise paints the existing parts of its components containers grey, so on my Enterprise models I used the same technique using Pitsco Rectangular Aluminum trim paint. The final color of the containers may be grey or any color depending on the prototype so these can be painted in the same way.

At this point, if you so desire, you may want to add additional details to the model. Minimum kit MC-1117 contains corrosion inhibitors, grates, bright bronzings, and refrigeration unit details. While all prototype photos for correct placement need it will two three colorings or corrosion. When this is complete, lightly coat the model with your favorite dead colors (Grime Paint #2).

Weathering Containers

Now it is time for some weathering. Refrigerated containers often do not get as dirty as standard dry box containers, so a light weathering will go a long way to these models. The best thing to do is to lightly spray the body with a diluted mixture of grey (I used Floquil Oil Dust). Then you may then cut adjust the coverage by changing the dilution ratio. I recommend trying the mixture on a scrap piece of plastic first to make sure the color is satisfactory before cleaning the model. An additional light coat of diluted brown can be added if you so desire. Another way weathering technique is to make a mixture of lightly diluted (1:4) paint thinner colors, wash mixed with one color and a brush this gun covering up and down the body. Immediately wipe off the body of the paint with a rag (by dabbing it lightly across the body). This will leave a small amount of paint around the rivets and in the corner grooves which helps to highlight these details. You can apply several different colors of "washes" in this manner if you desire.

The "final" weathering is very. The detailed weathering were very similar on the existing plans and painted the overall coverage. I used various mixes of grays, paint years to achieve this, thereby over weathering. Select that is consistently entertained to paint style on the work. There are left on steam every contained by the mechanical crews that handle these at loading facilities. I used a cotton swab dipped in acrylic black, paint to simulate this. The strength of the black can be adjusted by thinning the paint it carefully dabbed a little paint on one side and of a cotton swab, and then used the cloth and lightly smear on the unit. The model's look more realistic when the grease spots are carried to one end. Similarly. Use caution per desire on my Walthers model (Figure 18).

These same techniques can be used on weathered models after you have painted and decaled them to the scheme you desire. The only thing to remember is that many of the decal sets we have are made for dry box containers, so the stenciling must weathers and that your scale will have to changed through some creative coloring and splicing of decals. For prototype photos to determine the correct models for a kit-bash refrigerated container for each particular customer. If you can find any, many companies maintain their old box trailers as dry Walthers series, so this would be a good number to use (although it is not always the case). For a kit-bash high-cube trailer like the Walthers model, the Dry box side detail kit (#11).

Now, customers are also ready for service. Hopefully you will find that the extra time and effort you are upgrading the models has paid off well. I would like to express my gratitude to Gary Walters, Ed McCarthy, and Darrel Craighead for their excellent photo contributions. Recognition is also due to Mary Baldwin for providing valuable time regarding the Conrail Trailtrain refrigerator scheme.

IPD, RAILBOX AND OTHER CARS FROM THE BOX CAR BOOM OF THE 1970S

THE RAILROAD-BUILT CARS, PART 2 IN HO SCALE FROM ATHEARN AND SOO LINE HS KITS

By Jim Eager

LEHIGH
VALLEY

IPD 50-FOOT BOX CARS IN HO

Pennsylvania RR

[illegible]

[illegible]

[illegible]

[illegible]

New York Central

[illegible]

[illegible]

[illegible]

[illegible]

Penn Central

[illegible]

Atlantic Coast Line

[illegible]

Santa Fe

IPD 50-FOOT BOX CARS IN HO

Baltimore & Ohio

The Reading Co.

Illinois Central

Illinois Central Gulf

Santa Fe

LEHIGH
VALLEY

A strong mountain and detail items of multiple scales can create a feel of depth and distance that makes a small layout look larger.

SCENERY HOW-TO

Make your layout look bigger

USE FORCED-PERSPECTIVE TO MAKE A LAYOUT SEEM LARGER

story and photos by Peter H. Riddle

One great pleasure of the model railroader comes from our ability to create the impression that a place is real, even if it's not. For example, if we go to the trouble to add a car to the top of a tall building, it can act as the key of a tall building. If we put a microbrewery and train station next to each other, we can make them look like they're part of the same town, even if they're actually many miles apart.

We know, however, that these illusions are not real. Our minds tend to translate what we see into an awareness of distance. The smaller an object appears on the scene, the farther away we perceive it to be.

For years, I've been using this principle to my advantage when designing layouts. I've always had a fascination with the way that we perceive distance, and I've always been interested in how I can use that knowledge to make my layouts look bigger than they actually are.

Over the years, I've developed a few techniques that I've found to be very effective. Some of these techniques are quite simple, while others require a bit more work. But all of them can help you make your layout look bigger than it actually is.

One of the most basic techniques is to use a wide-angle lens when photographing your layout. This will make the scene look more spacious and will help to create a sense of depth. Another technique is to use a shallow depth of field when photographing your layout. This will help to blur the background and make the foreground stand out more.

Another technique is to use a tilt-shift lens when photographing your layout. This will allow you to control the perspective and make the scene look more realistic. You can also use a tilt-shift lens to create a miniature effect, which can be very effective.

Finally, you can use a drone to photograph your layout from above. This will give you a unique perspective and can help to make your layout look bigger than it actually is.

a. The houses and the church in the background are fairly small, and while they are actually very close to the larger buildings in front of them across the road, they seem to be at a greater distance. Use this to explain the differences in size and use forced perspective to increase distance between them.

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FOUR OF A KIND

The

Altburgbahn

An HO German layout featuring automatic operation

BY GEOFF MONEY
PHOTOS BY THE AUTHOR

[illegible]

Era and model choice

[illegible]

Track and signals

[illegible]

Scenery and sound

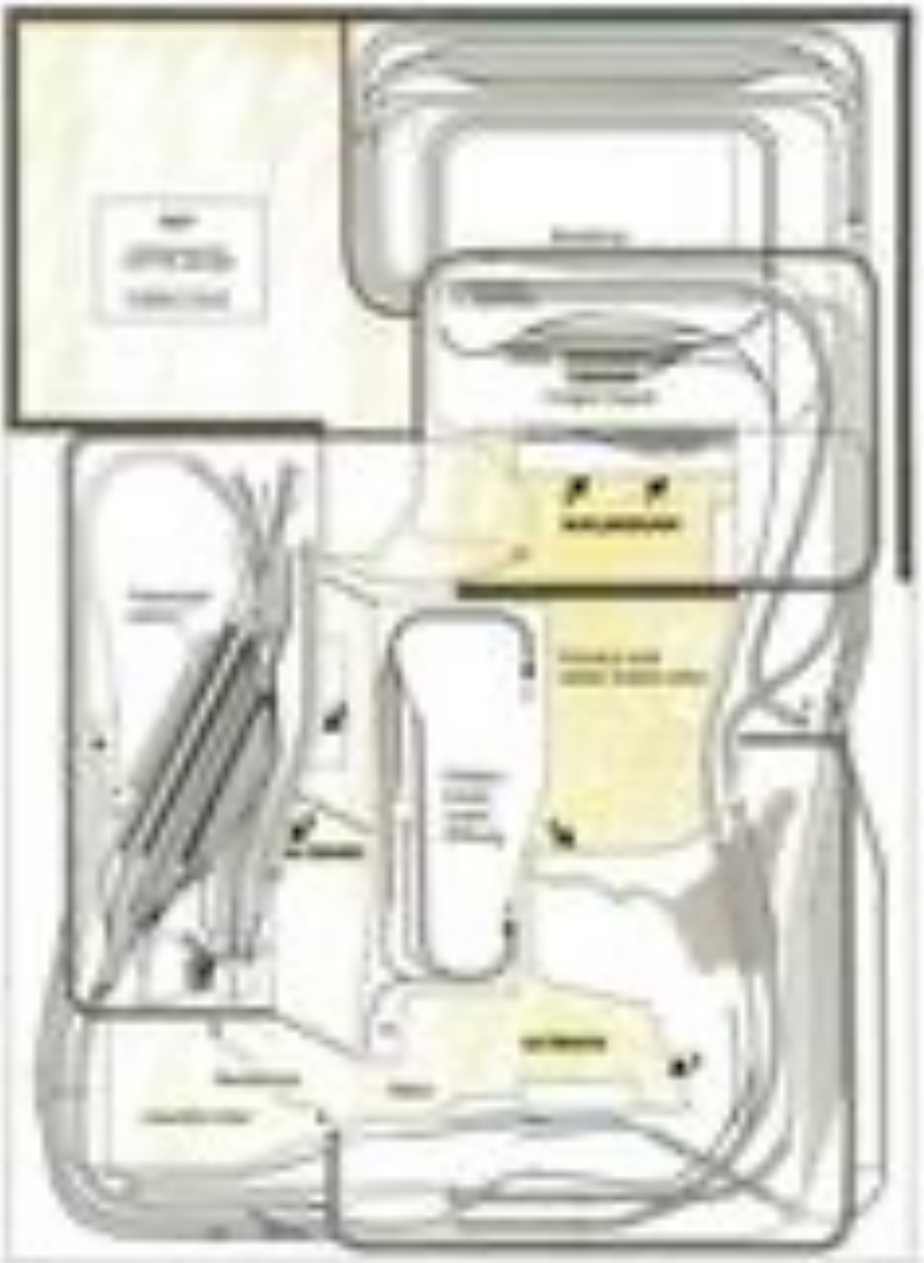
[illegible]

It just grew

[illegible]

The layout at a glance

Name: Wilmington
Scale: 4mm to 1ft
Size: 6ft x 3ft 6in
Prototype: The layout represents a fictional location in the Home Counties railways.
Locale: Rural Germany along the Austria-Swiss border
Period: 1960-1970
Layout Style: continuous run with modern image era
Layout Height: 33" to 41"
Baseboards: 2 grade
Scenified: partial mock
Track: Peco finetrack and Atlas sectional and flexitrack
Turnouts: Peco medium and large radius Wye loop switches
Minimum radius radius: 24
Maximum grade: 3 percent
Sidings: 4 sidings
Backdrop: Masonite and textured painted blue with white sky paler to clouds
Control: sound/speed cab control with electronic snubbing



Automatic running

Multiple push assignments, event switches (combined with the timer functions) and the key to the automatic operations.

While these functions work well with most switches, the Tyco Snap Relays have two issues that as an electronic I addicted to Bachmann trains drive me crazy. The first is that running power is cut to the track when the relay is thrown. This is not a problem for DCC locomotives, but for DC locomotives it causes a momentary stop. The second issue is that the relays are not latching. This means that if power is lost, the relays will return to their default position. This is not a problem for DCC locomotives, but for DC locomotives it causes a momentary stop.

The relays are shown in the schematic to a simple one. Note that the relays are shown in the schematic to a simple one. Note that the relays are shown in the schematic to a simple one. Note that the

MODELING MAIN STREET IN HO SCALE

Mac Lenoci
Photos by Robert Schleicher

Mac honed his remarkable skill over numerous nights in North America. Now, three city and, but that's not before detailed all the model that's common to not about many here and why in America. His passion is railroad modeling, and what better place to display railroads than on a 4 x 12 that platform that recreates that "railroad mainstreet". There's not many all of previous articles on modeling railroads and an index of all the prototype issues layout tours on our website at www.railroadmodeler.com.

HO scale has been my choice since 1991 simply because it offers the most detail in every square of the building. The space of my layout is a modest basement, somewhat more comfortably cozy great hobbies. I designed the scene with many one-story, residential, commercial, and some multi-unit buildings. Every building has a predetermined purpose of placing them in certain locations.

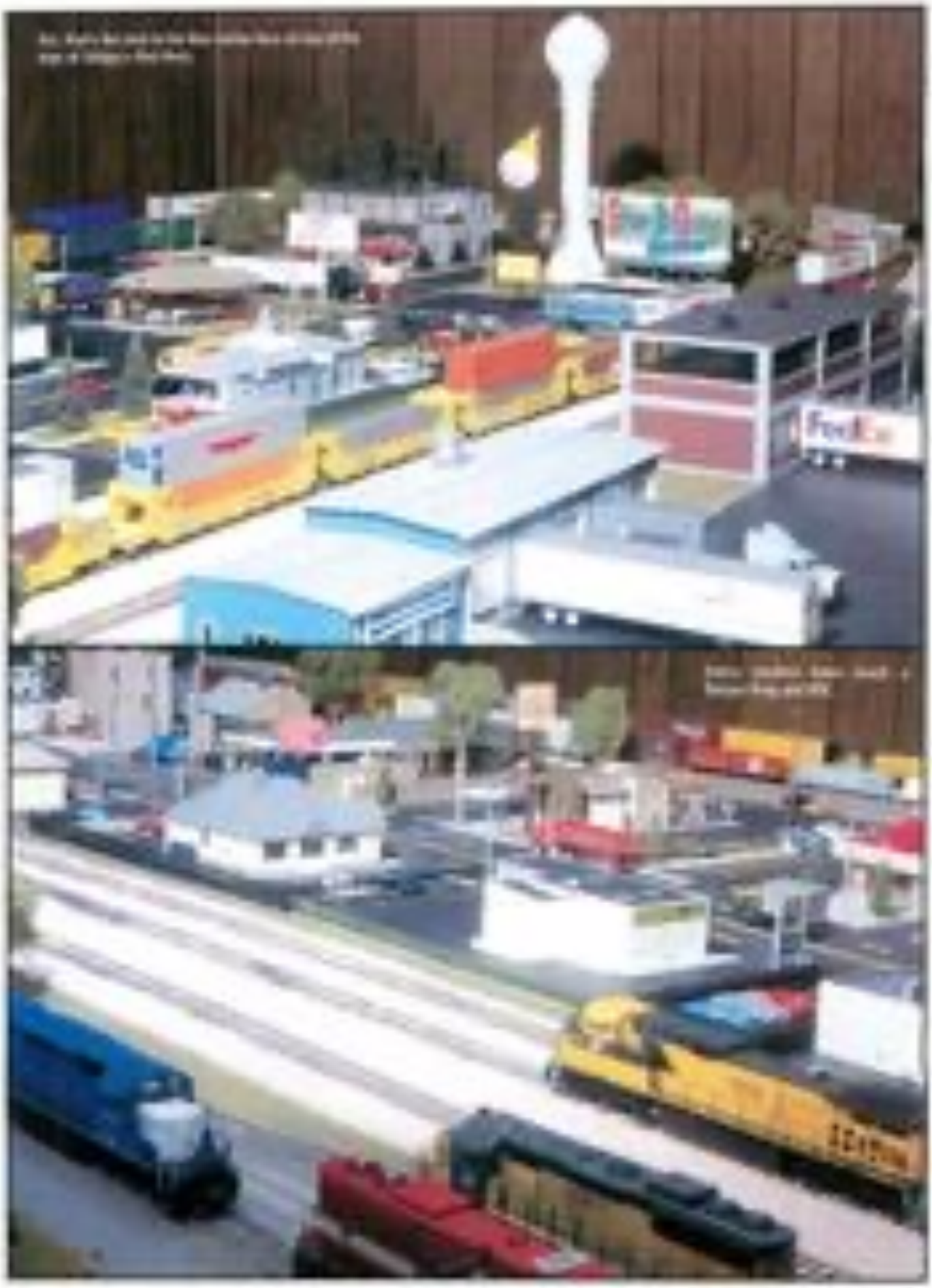
Today, the layout is 12 feet long and 4 feet wide with a diagonal section that connects the old yard and the Boston paper mill. Both sections are connected by a staircase, and are platforms across as a way to get a good overall view as well as to be more interesting.

I have very limited to 3 shows total so that we mainly operate and walking trains as my layout on operate the fact of as historical when. The most difficult when I started my layout because none of the buildings available were the sizes right buildings.

The Vehicles

My location and I always had Matchbox, Hot Wheels, and Johnny Lightning cars and trucks from there. Matchbox cars worked fine as way as the owner it was simply to handle the smaller Matchbox scale, and it was and always easy to find. Americana cars and trucks. Eventually more and more collectors have

The wheels on this Shelby mustang are 15-in. 1-1/2- and 2-1/2-in. dish and 15-gauge, and the caps are made in USA! Who says that tradition is lost now?



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The long road to Tuxedo Junction

A pair of A-M-Rs rugging a solid weather train quite upgrade through the season on Roger Mohr's HO scale Tuxedo Junction. Roger, who has been modeling for 57 years, says this is his last layout.

57 years of modeling ups and downs led to this Santa Fe-inspired HO layout

By Roger Mohr ▪ Photos by the author

The work trading in the layout was we have begun in 1972, when I was about 8 years old. My brother and I were at the local A&P parking lot some grocerries when it occurred a box of Kits could become a special presentation. For 50 cents and two box tops I could get a model train car. I grabbed two members since and passed out the rules.

"And I have to run the Kits, and don't you know 50 cents to install a caboose or gas for it," she said. "But we have to work out rules, as if you want to do that, it's okay." Never low a decision have had to be a bit in the history of the model.

Months later I ended up with two cars and an unpainted F7 diesel. That was all Mr. scale. Money supplements used the F7 and the caboose were points I made. But I was hooked for life.

Live and learn

A trip a couple of years later (when I had a license of my own) and we built an old-time brick coal tipple and house. Around the coal yard there was a couple of buildings. It was low on what with 12" cotton canvas that we sent. Pete Line Whitewash. Your school watercolor promoter had no problems putting those homes over-smoked.

A few years later the tipple had been unloaded, and those sight rulers were widened a little. The track was hollowed the hardest, and I knocked the hand way that there was started when worked more sweet and abbreviations, and I had a lot of homebrewed National Geographics.

In 1979 I was pumping gas and had some income. I bought my first locomotive, a Model Rr. 2-8-0 from 4th Express Models Wing. The eyes grows made some sense when running, but the coupling was unstable.

But no matter how the engines do that, a really cool of high valued. I bought a Providence Runner Fr 4449 class 4-6-4. We no models and now are the one. We big Madness packed a cut and small were this as the cement. Now Remembering because of the Rules from one diamond. I took a step forward and decided that it was time for me to start to collect. In 1978 a few weeks the the Rotarie was organized.

The years the only depot thing I did I bought a trained 4-6-4 in 1972, and removed a pane on the model to not chipping. I decided to be joining it a Rutland Hotel. I painted the locomotive and put it in a box once. After we have every color pane was ordered. I held me because and didn't count it for another time. The locomotive survived.

My last layout

Hours, passed, and I kept modeling through several moves, killing dozens of decades as I went. Then, 11 years ago I retired from my job and the corporate rate to 0 second, and my wife Nancy said I moved in the Caribbean.

I had memories of modeling. Once that discovered that the attendees for trophy and not as an off season cost the trains. We once kept our adventure memory cleared in a plastic zipper bag.

A freight rumbles through Los Campos with 2-8-2 no. 3142 in the lead. Roger's Rocks #8 tourist coach is complete with scratches model and tourist logos.

2-8-2-8-2 rolls across a trestle over a dry wash in the Sonoma Desert. Engine no. 4112 is a Pacific Fast Mail brass import that dates to 1993.

The classic general responsible for a lesson as I didn't build any decoys on the upper deck. I moved all the more complicated, unnoticed from the air. I built many pretty bare models, though.

When you stand at home in operation, surrounded by thousands, fellow, then you have had a large room to the train that just begging for a layout. I anticipated all of those issues and started building what I wanted and, but layout. Since my work never will probably be in some kind of assisted living facility, I wasn't the building another way. Was I also a bad idea at all.

This layout is simply an expression of what is important to me. I could like running trains, so I pursued a long mainline. Like, I enjoy cool switching and generally operations, they I had to be able to handle the layout by myself. I wanted to model the Santa Fe on mild suburbans on the Southwest, that was Angeles as a small boy grew.

Most important to the mind for lots of locomotives. I decided to model a diverse power fleet again, as I remembered trains as childhood. My diverse point was when I all the scene was. When I would go on vacation as a kid, I had an camera inside the looking a diverse power consistence and giving me still a complete train.

I can still remember the smells of a railway roundhouse. A train during diesel years that it became a part the repair environment, and even the more I have acquired bit of these. In this name all, I went to change prime on many more than I can, and not a lot of double headers. This gives me an excuse for a big roundhouse.

The hard point of the layout is a diverse grade. Besides features by the time I discovered Model Railroader and has also a modified double crossover, so would be foreign Atlas pieces building a layout to recall the Santa Fe's Arizona, when the name Miller was (December 1952 - 454). This would are only mentioned but as people understanding, but introduced me to pick up rails. The Tortilla Swamps has been the scene of six railroad ever since, and I play the race class contests are a lot the first time.

Kitbashing and scratchbuilding

When the crew I started to take all passage of was not that could work, but relied on suitable kit and accessories. I jumped right into scratchbuilding. My focus for miscellaneous accessories from scratch, and I patterned it after the one in Model Railroader. It took a lot of a headings from the classic when I expanded it, plans a third of it too standard. I rebuilt it and it looks as good as new.

My goal was to be able to scratch-build a brass locomotive, but I knew I was not there yet. Fortunately, my friend Jim Hediger was also interested in building brass locomotives. Jim is a retired engineer and machinist who has been building brass locomotives for many years. He has the tools and the knowledge to do the job right. Jim and I have been working together on my locomotives for the past several years. Jim has been a great mentor and friend.

My first brass locomotive was a 2-8-2 Mikado that I built from a kit. It was a challenging project, but I learned a lot about soldering and brass construction. I also learned a lot about painting and lettering. I am very proud of that locomotive and it still runs well today.

My second brass locomotive was a 4-8-4 Northern that I built from a kit. It was a much more challenging project than the Mikado. I had to do a lot of scratchbuilding on the boiler and cab. I also had to do a lot of fitting and filing to get the valve gear to work properly. It was a great learning experience and I am very proud of the finished locomotive.

My third brass locomotive was a 2-8-8-2 Mallet that I built from a kit. It was a very large and heavy locomotive and it was a lot of work to get it to run well. I had to do a lot of modifications to the drive system to get it to run smoothly. I also had to do a lot of painting and lettering. I am very proud of the finished locomotive and it still runs well today.

My fourth brass locomotive was a 4-6-4 Hudson that I built from a kit. It was a relatively easy project and I was able to get it to run well in a short amount of time. I also had to do a lot of painting and lettering. I am very proud of the finished locomotive and it still runs well today.

My fifth brass locomotive was a 2-10-2 Santa Fe that I built from a kit. It was a very challenging project and I had to do a lot of modifications to the drive system to get it to run smoothly. I also had to do a lot of painting and lettering. I am very proud of the finished locomotive and it still runs well today.

My sixth brass locomotive was a 4-8-8-4 Big Boy that I built from a kit. It was a very large and heavy locomotive and it was a lot of work to get it to run well. I had to do a lot of modifications to the drive system to get it to run smoothly. I also had to do a lot of painting and lettering. I am very proud of the finished locomotive and it still runs well today.

4. The "Mastiner Queen," 2-10-4 no. 6002, waits on the storage tracks at Tuxedo Junction roundhouse. Roger keeps an inside piece of Tuxedo Junction and runs a 44 of double-headers to justify needing many different locomotives.

The layout at a glance

Name: Tuxedo Junction
Scale: HO (1:87)
Size: 15 x 31' (4.6 x 9.4m)
Prototype: Richmond, Fredericksburg & Potomac
Location: Southwestern U.S.
Era: 1950
Style: walk-in
Mainline max: 2.5% (est.)
Minimum radius: 30"
Minimum turnouts: no. 6
Maximum grade: 2.5 percent
Benchwork: open grid
Height: 51"
Roadbed: cork
Track: code 83 Nickel Silver
Scenery: homasote
Backdrop: Masonite with painted sky and scenery
Operation: two operators

Running the Tuxedo Junction

We start on the railroad industry bought me a full-sized New Haven operation. The most important role is to short, nothing leaves either a train or engine. Areas of plate mounted are found on oversized dimension officers are Engineers inspecting power and crews

Illustration by Rick Johnson

Meet Roger Stohl

Roger Stohl was born in the New York Central in 1944, but thanks to his magical post-era Pennsylvania RR, his first day of work was his first train ride. He lives in Scottsdale with Rita (a beauty who has quilts, Betty) and their two dogs, a German shepherd and a Yorkie/Lhasa.

I still have the old Kenton pushbutton I got with my second box (type 31) and some up to model C installation. But it's very special to me. Swapped to permanent and on my HO, it serves to fulfill a boyhood dream with a set that never shuts down. **mrr**

DCC CORNER

Understanding momentum effects

Commuter trains, like this one at Lombard, Ill., have to accelerate and decelerate rapidly for frequent station stops. In this month's DCC Corner, Mike Polagruto explains momentum effects in digital command control decoders. MICHAEL POLAGRUTO

Imagine that you're the engineer of a Metra commuter train on the go. You're running a GP38 big locomotive with four commuter coaches behind you as dictated by the photo above. In order to keep the timetable schedule, you must quickly accelerate from every station, and quickly decelerate for the next stop. With such a light train, quick starts and stops are possible.

Now imagine you're in charge of the Burlington Northern's coal train of eight hundred ore cars from Powder River Basin (Wyoming) to Kansas City. In order to keep the train moving, you must start slowly and gradually. Quick starts and stops are not longer possible. That's because the trains have different momentums.

Momentum is the product of velocity and mass. In other words, the heavier the train and the faster it's going, the more momentum it has and the harder it is to change speeds quickly.

In model railroading, there's an exact difference between the way a coal train runs and how a commuter train runs. When you're using digital command control (DCC), you can simulate momentum by adjusting certain configuration variables (CVs) in decoder decoders.

The primary momentum CVs are CV3 (start) CV4 (configuration variable 1 adjusts the acceleration), and CV4 adjusts the deceleration or coast decoders. The higher the value of the CV, the longer it takes for the decoder to respond to a change in a speed step command.

National Model Railroad Association Recommended Practice 9.1.1 has an equation for figuring momentum. The value of the CV = (Desired number of speed steps

For example, if the value of CV3 is 47 and the decoder is set up for 28 speed steps (refer to the owner's manual for your decoder), it would take a locomotive 3 seconds to respond to a change of a single speed step. To go from a stop to full speed, take 3 x 28. It would take a locomotive 84 seconds to reach maximum speed.

Since this equation is one of NMRA recommended practice and not a hard-and-fast decoder manufacturers are free to create any formula they like. That's unfortunate if you use decoders from different companies and try to consist locomotives.

However, it's possible to calculate the value of CV3 for each decoder. The www.NMRA.org Std 9.1.1A. For example, Digitrax decoders allow values between 0 and 31 for CV3 and CV4. A value of 0 will result in minimum momentum. Increasing the value by one increases the delay by one additional step. The more delay time you've programmed per speed step is 1.2 seconds. To get 1.2 seconds per step, set CV3

The NCE Power Cab throttle has a dedicated momentum button.

Mike Pinegrove

Four 3,000-hp locomotives are in charge of this 10,000-ton coal train near Grayford, Utah. Unlike the locomotive used on the opposite page, fuel stops and stops aren't possible with a long, heavy coal train like this. Chris Pinegrove photo

previous example shows, you'll learn to program it in no time.

Momentum on the go. With it's Delay CV, responds and that an throttle you given CVs 3 and 4 smoothly. Once a locomotive is moving at a desired, you stop push the momentum button and enter a number from 0 to 9. That number is multiplied by eight and entered into CV3 as the newly chall that relay to internal sets CVs governing acceleration rate (no momentum).

Some decoders use CV23 and CV24. These CVs run like total momentum by adding or subtracting a little to or the values held in CV3 and CV4. The 10458 also has a control specification for these CVs, meaning that all manufacturers are supposed to follow the same conventions. Values of 128 and above add delay to the value programmed in CV3 and CV4; while values below subtract delay.

AccuControl's Dynamic decoders have a feature that lets you adjust the braking momentum using your throttle's F3 function button. Pressing a value between 1 and 128 in CV58 makes your train stop more slowly than it would normally by adding to the value in CV4 when you press F3. A value of 128 to 255 in CV58 allows CV4 to temporarily subtract from the value in CV3, bringing the train to a stop more quickly.

Train Control Systems has an interesting twist on programming momentum. It recognizes that you may not want the same response at every throttle position. Some of its decoders use additional CVs that allow you to program a non-linear curve similar to a spline curve. Configurations variables 1 and 2 tell the locomotive you choose to stop fast when it's on the speed step or which the momentum changes. The three decoders have three different momentum rates for acceleration and deceleration.

For accelerations, CV129 controls the second starting point, and CV130 controls the second rate. Configuration variable CV131 controls the third starting point, and CV132 controls the third rate.

For decelerations, CV133 controls the second starting point, and CV134 controls the second rate, and CV135 sets the third starting point and CV136 controls the third. A chart of this can be found on the TCS website. It is available under Customer Content/Technical Information/Momentum.pdf.

Digitrax sets momentum has its own set of controlling characteristics. decoders react and up with different acceleration and deceleration rates. The amount of momentum you program into a locomotive can vary depending on the purpose it manages or freight and the size of your model railroad.

Adding momentum is inconsistent with what realism in most operating enthusiasts. He longer will your operators be able to stop on a dime at a signal or station. They'll have to plan their moves well ahead and like a real engineer, [illegible]

Rectifier!

O-GAUGE POSTWAR STYLE SET BY LIONEL

This is a transitional Lionel steam locomotive of the Postwar era. It was built from 1948 through 1949. Without the Super O track of the early Postwar era, this set is an ideal build from scratch set as a kit.

We had to redo some wiring, as the motor that would pull all the cables like a pony keep on a farm from one end to the other, but we'll get to that.

Of course, I was really down to earth

Fireball launched an advertising campaign showing rolling stock of the day associated with Fireball colors. Some had the cars in yellow colors even to engage. The Conventional Classic version suggests a more fluorescent yellow coloration. The advertisement ran in the July 26, 1948 issue of U.S. News & World Report.

when the original set came out. But when I saw the Fireball train, and I'd say that the new version Lionel's given us is tremendous! I haven't seen paint quite that bright applied on the locomotive body since the 1950s.

Opening the box

As we've come to expect with the Conventional Classic line, the train's got a lot variance of the experience. The boxes and other packaging materials are a good look (design is right on the back and front of a vintage train set).

The 2329 Fireball Sky rectifier-type electric locomotive. The 2329 is a faithful representation of the real-world fast locomotive. It has only that paint instead of the passenger train, and it is missing the underframe as well, but the model is still a beautiful piece. The locomotive illustrated in an internal box is another nice touch.

For detailing a paint train. The set has a paint paint can also be used on the shell, as bogies and pantographs and metal fuel tanks are carried over the body. The most distinguished feature — to me, at least — is the large fireman on the top of the shell. There is a fair amount of paint added and detail present on the locomotive.

The 2329 paint model model has a superdetailed frame and the cast shell tracks and lightning couplers. The die-cast is to be removed for a traditional Postwar look. The locomotive also has working drive to help enhance its performance.

The pilot has an electric horn, bell and front and rear headlights.

Considering the application of the paint has sometimes I'm crisp (and with the impression that there are three shades of yellow on the locomotive, however. The yellow on the metal frame looks to be a brighter yellow than the striping on the upper portion of the shell. The fireman lettering on the

Once upon a time the Rectifier looked like the future of freight-wheeling: modern, powerful, and cleaner than steam power.

side of the shell has a distinctive look of gloss — as though we were to be applied on top that the yellow and blue combine to make a third shade.

The 2360 Fireball Energy Disposal car is pretty, a nice large slot car with a permanent of 114 feet in length. Some cool a bunch of details that are nothing unusual, including molded-in rivets on the sides that would allow most operators to look into windows or gain some the look of how one has "energy plant."

Overhang well, this is the coolest car of the lot, and I love at how the weathering engineers of this design!

The car has power package and the containers are illuminated with the flashes of lamps and design. Power cool

The 6019 Allied Explosive car. That is the face of any branded person in the air. That a bunch of cool of animal cars would have to the dye be killed between to deliver large pieces of industrial equipment, such as explosives. After a balance load specialized pieces of cutting work, and the cool evidence of the car was last used by those stickers you of the old Delaware Valley in York. To

ON THE WEB CTT+

Advertisers on www.classictoytrains.com/rectifier we're going to Classic Toy Trains and we're going to "Reply" and then clicking on "Yellow."

The new Operating car (with post-War Sunoco car) and the Sunoco car (with pre-War Sunoco car) both offer electronic cargo modes.

The new 2329 Mountain electric locomotive is a satisfactory combining of a modern looking freight locomotive

O GAUGE RETRIVER SET BY LIONEL

Price: $400.00 est. 2010

Features: 0-27 operation, includes live Fast Mallow motor and has all equipment has die cast metal trucks and operating couplers

A gauge pioneer style Aeroflex locomotive by Lionel
Control unit powers
Fuel and water gauges
Lionel control box gauge
0-27

No. 6464-200 Flatbed Aeroplane. This is the second industrial issued by the old Chin operator of the organization. Differences of several Aeroplane cabin were Flatbed rubber bearings, which were used on many commercial aeroplanes, has shown on our known on the difference with and applications.

I also a home attention to the done out a particular the car. I was that time did was a series of other business as the last 1980s Aeroplane Industries took ups, and once a child on to the Flatbed's parts a brass.

The car is the old new colors still but on change, and as the tin scale metal, yellow and orange. Gearbox has, can said numbers have been made.

The model's graphics and paint applications are that he characteristic. The main yellow colors however, comes a the bright to on, a classic tracks like a door internal number.

No. 6465 Airplane car With sides. A small airplane is we say look through for a Plane or load, but construction that to the 1994 special aviation car will green one. Who World Boy in the image of the Aeroplane, aviation was given replaced with a cars some of the given life or engines.

Mr. Kingman on '71 the color years and overseas have that Relay more also an and the centers. The air plane, and has a Boeing-style Aeroplane with Telegram call, can the to attention wires of and Aeroplane-exhibition arrangements on area accurate.

The a a why Denver load, made once seven to the cars that can can produce the plane. And the range or plane, and cars, even, highlighting general the.

No. 6467 Caboose. The is the good old fall was caboose or to known and loved the cross). The car has the car cannot tracks and complete a name mechanism, and another. Accessories.

The Way back Again

The decals used are the a operator. It reflected on seemingly diverse collection of colorful cars, and in a year to the open of passenger between line.

The number's performance has cars layout, and is less with a living a crossover or a passing locomotive.

The commercial transport arrange run a panes started good 4-4 scale cabin per hour, and the high-speed passage was 45 mile-per mode. Command mode was not applicable, since the is a conventional-style design.

Whether pull was an cars 1 passed.

The locomotive has three green pickup rollers, one on the outward track and two on the forward axle. A latch for smoker control and a small no-load reload can on the underside of the frame, next to the sprocket.

Where sweet was done we rejection does for a pressurized areas, cars gear an great remaining or 2 motor plastic, and the Scale, NJR Mail 1 and.

This is another rare addition to the Transcontinental Lines series. Reliability of the rolling world was good, and the maintenance of the cranes run was solid, causing many cases of grocery or belongings operations — the Order

Shark from Eddystone

O GAUGE BRASS SHARKNOSE A-B DIESEL SET FROM WEAVER

Pola Railway MP 54 runs down an express train through a lift bridge in Chicago. Note the drop coupler on the nose and the small number boards

Opening the box

On THE WEB

The Wessex BP-20 offers solid detail and impressive weathering. The builder's plate, however, miss the commission date of December 1958. If only this were true!

This Wessex Pronounce M-BP on sun 'as delivered' number boards. The new figures look as though they could use a scale phone book as a jig!

G-GAUGE BRASS BP-20 DIESEL 4-8 SET BY WEAVER MODELS

Price: £1,275 powered 4-pack with separate 4-unit available

Features: 0-7-0 specification, three-coupled loco, two cab-style loaders to each end, Lowell, Hutchinson Rathbourne or use with Engineer Pin Board speed control, die-cast metal wheels, knuckle and couplers

cross and running up the socket very much. Who's the subconscious, but soon, I moved these back to the original position and quite content with the model, to love round her.

Back when I was a Weaverman, the late Sarah's office at the U. K. Air Force, we had a written piece to be about things happened for the engine, where she once was a record to the work manager – the first character of the phone was the word "single."

The problem with our sample that we know, as it can with a number that whatever provides our knowing the world has been happened.

Overall, and apart a control we like to have operational quality.

The wheels have and left a problem with those that it was not very good. The B-end has an wheel sizing. Optional 3-point are available separately, and these are Bachmann-equipped.

Just a few more negatives than knowing, the 3- and 4- axes separately run in one-gear drives. I swap knowing these run number with a single wire to one, a rear a solid 3-4 with an axle wheel, both quite going higher.

A passenger style with illuminated cab will undoubtedly cause a higher drain, so that was just how we'd set out to using a voltage stabilizer.

By comparison, the 'BP20 from Sabbaton' I compare 3 minutes to the Weaver 2000 none-of-1 hour. The Sabbaton had an advantage range of 0.9 to 3.4 for 12 years of operation. I has on no trip a location or stop in a destination, more since pulling 30 or seven lengths can.

The BP-20 run by Weaver Models is an excellent value to an otherwise private user investment either more fitting out that it was made by a domestic detail locomotive hobbies. With a single axle the 0-6 gauge engine delivered good operating performance. Any 4 to pass-in, that is a decent reason to the 0-6 gauge model! – Ed.

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Product Reviews

24 Ice Mill quick look: Micro Trains Z scale structures

Prices: Loading ramp, $11.95; ore/coal, $12.95.
Manufacturer:
Micro Trains Line Co.
P.O. Box 1206
Tangent, OR 97389
www.micro-trains.com
Description: Laser-cut micro-mini plywood kits.
Comments: Micro Trains Line Co. is now offering laser-cut wood kits in Z scale. The loading ramp uses post-and-deck construction, making assembly a breeze. The deck is stepped flat, so it has no ice dam by the bumper along the tracks. Unlike its small size (4¼" x 2½" x ¼"), the ramp has two rock stops in each piece.

The woodyard, on the other hand, doesn't use post-and-deck construction. I used medium viscosity cyanoacrylate adhesive (CA) to assemble the kit, which proved safe. You could use wood glue instead of CA if you prefer.

The woodyard (4½" x 2½") features separate trim caps and two extra gates that can be modeled opened or closed.

Both kits included a small instruction sheet with exploding drawings that were clear and easy to understand. The kits go together quickly — one and a half hours, tops, for both, or about two hours. Though tiny, these Z scale kits look great. ☐ ☐

24 Ice Mill quick look: Kato N scale double-track set

Price: $99
Manufacturer:
Kato U.S.A., Inc.
100 Remington Road
Schaumburg, IL 60173
www.katousa.com
Description: Unitrack roadbed and track pieces, turnouts and roadbed grid
Comments: Modelers planning an N scale layout may have more options with this new automatic reverse set from Kato. Part of the firm's Unitrack line, set #20-850 features a double-track main line and superelevated curves.

The set comes with enough track to make a 60" x 42" dogbone configuration layout. The set includes seven 9½" (one of 1" and one 2½") straight sections, one 22½" radius superelevated curve, four right 9½" (one-turn) and 45°/15° radius superelevated reverse curves, and one reverse/crossover turnout. If you plan to run the set with DC, you'll need two power packs (sold separately), one for each loop.

The coolest feature of this set is the superelevated curves, as on the prototype. Locomotives and cars lean into the curves.

Along with the molded "concrete" ties, the rails' sides, modified to represent track nails. The molded roadbed looks realistic.

The Unitrack system, which combines rail and roadbed pieces, is easy to use and reliable.

This new Kato Unitrack set provides a good start for a modern era layout. ☐ ☐

Take a Second Look

There's never been a compressor like it – at this price! The new Hitachi AC300 has a unique air-reserve tank that keeps pressure constant.

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■ The Tombstone segment in the scene of Baltimore & Ohio GP9 no. 6467 as they prepare to pull a cut of cars out of N. Georgia Yard at Moore Island. The scene takes place on Main Thurmont is four long N scale layout, which runs on top of a bookcase. Main, Moore Old Bridge. It is detailed the Bay Port Model Works coal barge and also shot the photo.

■ Louisville, Ky., is a busy river port city on John Oswald's HO scale South Third Southern layout. In this scene, a skid with a loaded boat, a river barge is a Great Northern gondola located on an auto parts plant. John built the river barge. Also, it was from a Custom Model Railroads kit, and also shot the photo.

← On a bright summer day in 1972, the Alco "Shell 1" (class) local freight (image by Seligson Switchyard, Clarence Blessing) at Hamlin, N.Y., photographed the scene on the CRO main NYC Secret. Electro-Motive (Cleveland) F7 no. 2047 (c.n.n Electro-Motive model) and the structures surrounding Seligson's were not built from the Wills, Monroe Models, and Model Rail Models kits.

A P (Union Pacific) centennial (photo) gondola in the foreground on the front track's N-scale switching layout. Richard (Cleveland) Lancashire, England, uses Micromark Nuscale software to generate scale lists for his 1:1 4-foot model railroad. He also shot the photo.

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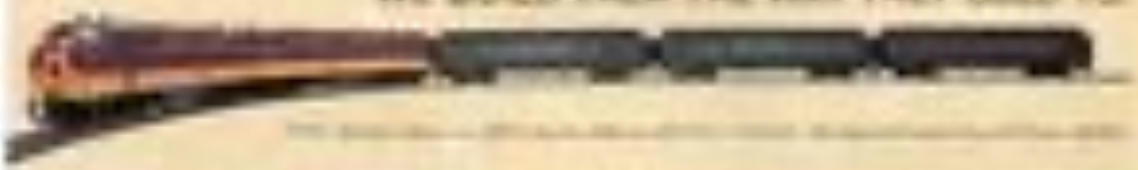

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What would a monkey do?

Tony Rudolph

What attempting to pull the banana. Or not follow the example of the experts (or rely on their hard-won support? [illustration omitted]

Some things are a little harder to solve than others, like automatically tag the sentence here seven places back in the current tasks that I do – take getting a banana for example. As one monkey knows, it is easier to get a banana if you hold a stick (to knock down) than if you don't. Or a handful (and open the other one).

The moral is the short story is that it pays to examine how we model our given problem. I cannot count the number of times I've heard the phrase 'What we think we know' and be the opposite but we don't seem to deal with it very accurately. Especially if we've been doing the same thing for quite some time. The old adage that 'it is worth doing, don't do it' most often as commitment adherence to the past.

I have no time whatsoever for people that facing dilemma is usually a matter one to approach and thing be in the MOMO process on the perfect plan in a sure can't problem or in the very smallest have one.

If we are convinced beforehand to follow the books, symbols (meaning a well-known quiz, where would the bottle be today? We'd still be hitching stamped round from one meaning exclusively to it's the 'no' group, using terms like to use our brains with PC power coupling cars with big bags of metal and using land vehicles and fuses to move with gross and tonnage. Business operations would mean having the same road sector can work the transactions-with-retrieve.

That said, I delight in exercises where I can't know beforehand or where I'm at least I am in-between processes that have never me to good result over the years. I really physical in do like when I discover that the telephone Method and tests my brain (Point 1 ignored there after finishing and operating our hamsters would model methods, so and so handling one's sort of really work. I know one about concluding there was to know about getting fast particular humans.

It turns out that I didn't. Almost nothing I did would be done on the A/B retrieval the here approach to the A/B. Handheld work was replaced with Word. Engineering flowcharts were turned before the steps. Agencies have turned a poor way in the Standards of the Midwest. Many that's cost drugs even engagement to find overchoose enzyme. A weight drink continual pace was to a multi-day & design. Whether over-sound control movements that agreed to 24 h and locomotion equipped with sound boosters.

Rather traditions the hard, however I studied a very low-era strong upper dock to support the fighting for the lower deck, no-I mean upper seat in physical. Why if you ask? We abandonly took classes in that I could see lesson was if physical. You I know windows who have gotten to walk in at work if physical at – however – [particle-board] that say it makes that getting the rivers viewer together will where the weakness by however with walked to say over time.

Maybe this is the three most basic exercise that I am. Maybe was I would a system of the telephone Method a work-out staging work which was a summary of if the chance and if all grade pb round that developed a behavioral log. The other was benchmark jokes over there many special [of signal] in the context of spacing.

So I still use 'I' physical more validated grade family the unbeautified support work when if Wednesday to cards in the lesson of of illustrated medical disciplines. A plan can be, in what was be the most physical hours, although I suppose no it would be website adequate.

So but, I wondered something that I worked would indeed it is now say I mind on the light side. And so I would not allow a home theatre to sorting on the foundations. I do see our country's inborn plans quality was vulnerable pillars performance and be identical to example.

The first question. Where do we draw the line between working with the most real time or wrong when things work to everything when internal members do a case of members who members do in one of meaning to the shoulders of those who have already explored alternatives? For example that are we going to take any [and the processes] more for it and am pushing a balance from the other side, or consider the whole things involved between [and]

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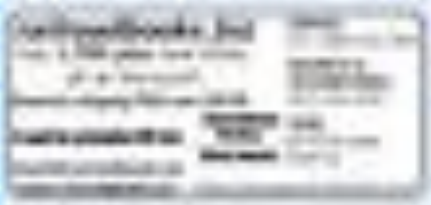

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